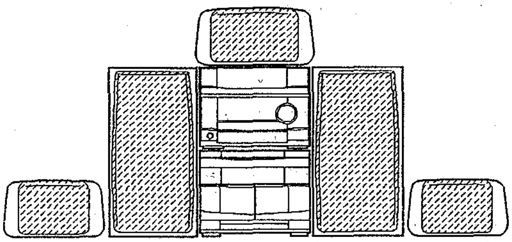
aiwa

aiwa SERVICE

NSX-AVH9

SERVICE MANUAL



COMPACT DISC STEREO CASSETTE RECEIVER

- BASIC TAPE MECHANISM: 2ZM-3MK2 PR2N
- BASIC CD MECHANISM: 4ZG-1WRNM
- TYPE. HE,HR

- If requiring information about the CD mechanism, see Service Manual of 4ZG-1WR.
  (S/M Code No. 09-965-128-10T)

- If requiring information about the FD-NH9/NH90, see Service Manual of NSX-H9/H90.
  (S/M Code No. 09-966-141-50T)

SYSTEM	AMPLIFIER	CASSETTE DECK CD PLAYER	REMOTE CONTROLLER	SPEAKERS
NSX-AVH9	RX-NAVH9	FD-NH9	RC-T506	SX-NAVH9 SX-C400 SX-R230

S/M Code No. 09-967-155-10T

SPECIFICATIONS

STEREO RECEIVER RX-NAVH9

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

AM tuner section

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 μV/m
Antenna	Loop antenna

Amplifier section

Power output	**Front** (without connecting to the SURROUND SPEAKERS) Rated: 95 W + 95 W (6 ohms, T.H.D. 1%, 1 kHz) Reference: 80 W + 80 W (6 ohms, T.H.D. 10%, 1 kHz) **Rear (Surround)** Rated: 18 W + 18 W (16 ohms, T.H.D. 1%, 1 kHz) Reference: 20 W + 20 W (16 ohms, T.H.D. 10%, 1 kHz) **Center** Rated: 18 W (8 ohms, T.H.D. 1 %, 1 kHz) Reference: 20 W (8 ohms, T.H.D. 10%, 1 kHz)
Total harmonic distortion	0.1 % (60 W, 1 kHz, 6 ohms)
Inputs	VIDEO 1/MD IN: 200mV (adjustable) VIDEO 2/AUX IN: 200 mV (adjustable) MIC 1, MIC 2: 1 mV (10 kohms)
Outputs	LINE OUT: 200 mV SUPER WOOFER: 2.6 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 16 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

General

Power requirements	120 V/220 – 230 V/240 V AC, switchable 50/60 Hz
Power consumption	160 W (system 180 W)
Dimensions of main unit (W × H × D)	260 × 198 × 333.5 mm
Weight of main unit	6.5 kg

COMPACT DISC/STEREO CASSETTE DECK FD-NH9

Cassette deck section

Track format	4 tracks, 2 channels stereo
Frequency response	Metal tape: 35 Hz – 17000 Hz CrO2 tape: 50 Hz – 16000 Hz Normal tape: 55 Hz – 15000 Hz
Signal-to-noise ratio	75 dB (Dolby C NR ON, Metal tape peak level)
Recording system	AC bias
Heads	Deck 1: Playback head × 1 Deck 2: Recording/playback/erase head × 1

Compact disc player section

Laser	Semiconductor laser (λ = 780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.03 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

General

Dimensions (W × H × D)	260 × 203 × 321.5 mm
Weight	3.9 kg

Speaker system SX-NAVH9

Cabinet type	3 way, bass reflex (magnetic sealed type)
Speakers	Woofer: 140 mm cone type Tweeter: 60 mm cone type Super tweeter: 20 mm ceramic type
Impedance	6 ohms
Output sound pressure level	88 dB/W/m
Dimensions (W × H × D)	230 × 396 × 265 mm
Weight	4.5 kg

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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  Under license from BBE Sound,Inc.

MODEL NO.
RX-NAVH9

ELECTRICAL MAIN PARTS LIST

DESCRIPTION で判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-069-049		C-IC,BA3842F
	87-A20-067-040		C-IC,M65849FP
	87-A20-191-019		IC,STK-419-140A
	87-A20-082-010		C-IC,NJW1102AFG1
	87-017-888-080		C-IC,NJM4558MD
	87-017-888-089		IC,NJM4558MD
	87-017-915-089		IC,BU4094BCF
	87-017-804-019		IC,BU4052BC
	87-A20-083-019		IC,BA3835S
	87-A20-107-019		IC,BA3836
	87-017-914-019		IC,BU4094 BC
	87-A20-056-019		IC,BA3880S
	87-070-267-010		C-IC,STK405-050
	87-070-127-119		IC,LC72131D
	87-017-714-119		IC,LA1836L
	86-NT1-620-010		IC,LC 866424V-5A99
	87-070-083-019		IC,GP1U281X
TRANSISTOR			
	89-213-702-019		TR,2SB1370E
	89-109-352-089		TR,2SA 935 Q
	87-026-610-089		TR, KTC3198GR
	89-332-665-089		TR,2SC3266GR
	89-337-221-389		C-TR,2SC3722K
	89-324-122-089		C-TR,2SC 2412R
	89-110-372-089		C-TR,2SA1037 R
	89-110-373-089		C-TR,2SA1037 S
	87-026-210-089		C-TR,DTC144EK T147
	87-026-235-080		C-TR,DTC114EK
	89-421-141-289		C-TR,2SD2114K,UV
	87-026-609-089		TR, KTA1266GR
	89-109-373-089		TR,2SA1037S
	89-112-965-089		TR,2SA1296GR
	87-026-228-089		C-TR DTA124EK
	89-113-187-089		TR,2SA1318TU
	87-A30-047-080		TR,CSD655E
	89-333-266-089		C-TR,2SC3326B
	89-110-155-080		TR,2SA1015GR
	87-026-610-080		TR,KTC3198GR
	87-026-609-080		TR,KTA1266GR
	87-026-214-089		TR,DTA114YS
	87-026-211-089		C-TR,DTA144EK T147
	89-327-125-089		C-TR,2SC2712GR
	89-327-143-089		C-TR,2SC2714 (O)
	87-026-226-089		C-TR,DTA143EK
	89-505-434-589		C-FET,2SK543(4/5)
DIODE			
	87-A40-116-069		DIODE,RS403L-B-D-51
	87-A40-115-069		DIODE,SA D102
	87-070-274-089		DIODE,1N4003 SEM
	87-020-027-089		C-DIODE,1SS184
	87-020-125-089		C-DIODE,1SS181
	87-020-465-089		DIODE,1SS133
	87-017-174-089		ZENER,HZS11A3L
	87-017-146-089		ZENER,HZS30-2
	87-001-290-089		ZENER,HZS5C1
	87-017-093-080		ZENER,HZS5C3
	87-A40-116-060		DIODE,RS403L-B-D-51
	87-017-148-089		ZENER,HZS6A1L
	87-001-731-089		ZENER HZS6C2L
	87-001-911-089		ZENER,UTZJ4.7A (TAPG)
MAIN C.B			
C101	87-016-520-099		CAP E 3300-65
C102	87-016-520-099		CAP E 3300-65
C104	87-010-235-089		CAP,E 470-16 SME
C105	87-010-235-089		CAP,E 470-16 SME
C106	87-016-285-089		CAP,E 47-100 SME
C107	87-A10-253-089		CAP,E 3.3-50 BP
C108	87-010-407-089		CAP,E 33-50 SME
C109	87-010-263-089		CAP,E 100-10 SME 5X11
C112	87-010-382-089		CAP,E 22-25 SME
C113	87-010-403-089		CAP,E 3.3-50 SME
C116	87-012-140-089		C-CAP,S 470P-50 CH
C121	87-012-368-089		C-CAP,S 0.1-50 F
C122	87-012-368-089		C-CAP,S 0.1-50 F
C123	87-012-368-089		C-CAP,S 0.1-50 F
C124	87-012-368-089		C-CAP,S 0.1-50 F
C125	87-010-263-089		CAP,E 100-10 SME 5X11
C126	87-010-189-080		C-CAP,S 8200P-50 K B
C127	87-010-189-080		C-CAP,S 8200P-50 K B
C131	87-010-186-089		C-CAP,S 4700P-50 B
C132	87-010-186-089		C-CAP,S 4700P-50 B
C152	87-010-260-089		CAP,E 47-25 SME
C171	87-010-453-090		CAP,E 4700-25 SME
C172	87-010-453-090		CAP,E 4700-25 SME
C173	87-012-368-089		C-CAP S 0.1-50F
C174	87-012-368-089		C-CAP S 0.1-50F
C175	87-012-368-089		C-CAP S 0.1-50F
C176	87-012-368-089		C-CAP S 0.1-50F
C220	87-010-194-089		C-CAP,S 0.047-25 F
C221	37-010-545-089		CAP,E 0.22-50 SME
C222	87-010-545-089		CAP,E 0.22-50 SME
C225	87-012-157-089		C-CAP,S 330P-50 CH
C226	87-012-157-089		C-CAP,S 330P-50 CH
C227	87-010-402-089		CAP,E 2.2-50 SME
C228	87-010-402-089		CAP,E 2.2-50 SME
C229	87-010-403-080		CAP,E 3.3-50 SME
C230	87-010-403-080		CAP,E 3.3-50 SME
C231	87-018-099-089		CAP,TC-U 3.9P-50 CH
C232	87-018-099-089		CAP,TC-U 3.9P-50 CH
C233	87-010-196-089		C-CAP,S 0.1-25 F
C234	87-010-196-089		C-CAP,S 0.1-25 F
C235	87-010-196-089		C-CAP,S 0.1-25 F
C236	87-010-196-089		C-CAP,S 0.1-25 F
C240	87-010-197-089		C-CAP,S 0.01-25 B
C245	87-012-368-089		C-CAP,S 0.1-50 F
C500	87-010-405-089		CAP,E 10-50 SME
C501	87-010-213-089		C-CAP,S 0.015-25 B
C502	87-010-213-089		C-CAP,S 0.015-25 B
C503	87-010-179-089		C-CAP,S 1200P-50 B
C504	87-010-179-089		C-CAP,S 1200P-50 B
C505	87-010-546-089		CAP,E 0.33-50 SME
C506	87-010-546-089		CAP,E 0.33-50 SME
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-196-089		C-CAP,S 0.1-25 F
C530	87-010-197-089		C-CAP,S 0.01-25 B
C531	87-010-183-089		C-CAP,S 2700P-50 B
C532	87-010-194-089		C-CAP,S 0.047-25 F
C533	87-010-196-089		C-CAP,S 0.1-25 F

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C534	87-010-263-089		CAP,E 100-10 SME 5X11
C535	87-010-404-089		CAP,E 4.7-50 SME
C536	87-010-404-089		CAP,E 4.7-50 SME
C537	87-010-545-089		CAP,E 0.22-50 SME
C539	87-010-194-089		C-CAP,S 0.047-25 F
C540	87-010-384-089		CAP,E 100-25 SME
C541	87-010-404-089		CAP,E 4.7-50 SME
C542	87-010-404-089		CAP,E 4.7-50 SME
C560	87-010-318-080		C-CAP,S 47P-50 J CH
C561	87-010-318-080		C-CAP,S 47P-50 J CH
C562	87-010-318-080		C-CAP,S 47P-50 J CH
C563	87-012-142-089		C-CAP,S 0.33-16 F
C564	87-010-196-089		C-CAP,S 0.1-25 F
C565	87-018-209-089		CAP,TC-U 0.1-50 F
C566	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-184-089		C-CAP,S 3300P-50 B
C602	87-010-184-089		C-CAP,S 3300P-50 B
C603	87-010-405-089		CAP,E 10-50 SME
C604	87-010-405-089		CAP,E 10-50 SME
C605	87-010-260-089		CAP,E 47-25 SME
C606	87-010-101-089		CAP,E 220-16 SME
C607	87-010-188-089		C-CAP,S 6800P-50 B
C608	87-010-188-089		C-CAP,S 6800P-50 B
C609	87-018-127-089		CAP,TC-U 470P-50 B
C610	87-018-127-089		CAP,TC-U 470P-50 B
C611	87-010-197-089		C-CAP,S 0.01-25 B
C612	87-010-197-089		C-CAP,S 0.01-25 B
C613	87-010-195-089		C-CAP,S 0.068-25 F
C614	87-010-195-089		C-CAP,S 0.068-25 F
C615	87-010-404-089		CAP,E 4.7-50 SME
C616	87-010-404-089		CAP,E 4.7-50 SME
C617	87-010-404-089		CAP,E 4.7-50 SME
C618	87-010-404-089		CAP,E 4.7-50 SME
C701	87-010-381-089		CAP,E 330-16 SME
C702	87-010-404-089		CAP,E 4.7-50 SME
C703	87-010-197-089		C-CAP,S 0.01-25 B
C704	87-010-197-089		C-CAP,S 0.01-25 B
C711	87-010-263-089		CAP,E 100-10 SME 5X11
C712	87-010-196-089		C-CAP,S 0.1-25 F
C715	87-010-197-089		C-CAP,S 0.01-25 B
C716	87-010-197-089		C-CAP,S 0.01-25 B
C722	87-010-152-089		C-CAP,S 8P-50 CH
C723	87-010-178-089		C-CAP,S 1000P-50 B
C725	87-010-178-089		C-CAP,S 1000P-50 B
C727	87-010-196-089		C-CAP,S 0.1-25 F
C728	87-010-248-089		CAP,E 220-10 SME
C760	87-010-197-089		C-CAP,S 0.01-25 B
C761	87-010-196-089		C-CAP,S 0.1-25 F
C770	87-010-405-089		CAP,E 10-50 SME
C771	87-010-405-089		CAP,E 10-50 SME
C772	87-010-194-089		C-CAP,S 0.047-25 F
C773	87-010-196-089		C-CAP,S 0.1-25 F
C774	87-010-263-089		CAP,E 100-10 SME 5X11
C775	87-010-405-089		CAP,E 10-50 SME
C776	87-010-197-089		C-CAP,S 0.01-25 B
C777	87-010-400-089		CAP,E 0.47-50 SME
C778	87-010-401-089		CAP,E 1-50 SME
C779	87-010-401-089		CAP,E 1-50 SME
C780	87-010-197-089		C-CAP,S 0.01-25 B
C781	87-010-405-089		CAP,E 10-50 SME
C782	87-010-405-089		CAP,E 10-50 SME
C787	87-010-184-089		C-CAP,S 3300P-50 B
C788	87-010-184-089		C-CAP,S 3300P-50 B
C789	87-010-179-089		C-CAP,S 1200P-50 B
C790	87-010-179-089		C-CAP,S 1200P-50 B
C791	87-010-401-089		CAP,E 1-50 SME
C792	87-010-180-089		C-CAP,S 1500P-50 B
C793	87-010-189-089		C-CAP,S 8200P-50 B
C794	87-010-408-089		CAP,E 47-50 SME
C795	87-010-194-089		C-CAP,S 0.047-25 F
C796	87-010-403-089		CAP,E 3.3-50 SME
C801	87-018-134-089		CAP,TC-U0.01-16 Y
C813	87-018-134-089		CAP,TC-U0.01-16 Y
C814	87-010-197-089		C-CAP,S 0.01-25 B
C815	87-018-134-089		CAP,TC-U 0.01-16 Y
C816	87-018-134-089		CAP,TC-U 0.01-16 Y
C817	87-010-197-089		C-CAP,S 0.01-25 B
C818	87-010-197-089		C-CAP,S 0.01-25 B
C819	87-010-197-089		C-CAP,S 0.01-25 B
C820	87-010-408-089		CAP,E 47-50 SME
C821	87-010-197-089		C-CAP,S 0.01-25 B
C822	87-010-197-089		C-CAP,S 0.01-25 B
C823	87-010-197-089		C-CAP,S 0.01-25 B
C828	87-010-196-089		C-CAP,S 0.1-25 F
C829	87-010-196-089		C-CAP,S 0.1-25 F
C940	87-010-197-089		C-CAP,S 0.01-25 B
C946	87-010-401-089		CAP,E 1-50 SME
C960	87-010-196-089		C-CAP,S 0.1-25 F
C961	87-010-152-089		C-CAP,S 8P-50 CH
CF801	87-008-261-019		FLTR,SFE10.7MA5-A
CF802	87-008-261-019		FLTR,SFE10.7MA5-A
FFE801	A8-6ZA-190-039		6ZA-1FEUNM
J252	87-A60-031-010		JACK,6.3 BLK ST W/S
J253	87-099-801-010		JACK,PIN 1P BLK
J254	87-033-240-019		TERMINAL,SP 4P32SV1-05
J801	87-033-235-019		TERMINAL,ANT (H)
L101	87-003-383-019		COIL,1UH-S
L102	87-003-383-019		COIL,1UH-S
L701	87-003-293-019		COIL,TRAP MPX
L702	87-003-293-019		COIL,TRAP MPX
L741	87-A50-015-019		COIL,FM DET(TOK)
L742	87-A90-051-019		FLTR,CFAZ-450(TOK)
L770	87-003-102-089		COIL,10UH
L832	87-003-098-089		COIL,2.2UH
L981	86-NF4-665-019		AM PACK 1(TOK)
⚠PR106	87-026-689-080		PROTECTOR,1A 491SERIES 60V
R105	87-022-600-089		RES,M/F 0.1-2W J
R106	87-022-600-089		RES,M/F 0.1-2W J
RY101	87-045-389-019		RELAY,OSA-SS-212DM5
SFR722	87-024-432-080		SFR,4.7K H RH063MC
TC701	87-011-253-089		TRIMER,30P LAR
TH240	87-A90-221-080		C-THMS,100K
W101	85-NF5-628-019		F-CABLE 7P-2.5
W304	86-NT2-655-010		CORD,FG15P
X703	84-508-618-019		VIB,CER CSB 456 F15
X721	87-030-372-019		VIB,XTAL 7.2MHZ

FRONT C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-401-049		CAP,E 1-50 SME
C102	87-010-401-049		CAP,E 1-50 SME
C103	87-010-182-089		C-CAP,S 2200P-50 B
C104	87-010-182-089		C-CAP,S 2200P-50 B
C105	87-010-545-049		CAP E 0.22-50 SME
C106	87-010-545-049		CAP E 0.22-50 SME
C107	87-010-993-089		C-CAP,S 0.056-25 B
C108	87-010-993-089		C-CAP,S 0.056-25 B
C109	87-012-393-089		C-CAP,S 0.22-16,R,X
C110	87-012-393-089		C-CAP,S 0.22-16,R,X
C111	87-010-401-049		CAP,E 1-50 SME
C112	87-010-260-049		CAP,E 47-25 SME
C113	87-010-405-049		CAP,E 10-50 SME
C114	87-010-406-049		CAP,E 22-50 SME
C115	87-010-196-089		C-CAP,S 0.1-25 F
C401	87-010-196-089		C-CAP,S 0.1-25 F
C402	87-010-196-089		C-CAP,S 0.1-25 F
C450	87-010-112-049		CAP,E 100-16
C470	87-010-112-049		CAP,E 100-16
C501	87-010-322-089		C-CAP,S 100P-50 CH
C502	87-010-196-089		C-CAP,S 0.1-25 F
C503	87-010-196-089		C-CAP,S 0.1-25 F
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C601	87-010-196-089		C-CAP,S 0.1-25 F
C602	87-010-545-049		CAP E 0.22-50 SME
C603	87-010-321-089		C-CAP,S 82P-50 CH
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-010-196-089		C-CAP,S 0.1-25 F
C608	87-010-177-089		C-CAP,S 820P-50 SL
C609	87-016-251-049		CAP,E220-16 SMG
C610	87-010-405-049		CAP,E 10-50 SME
C611	87-010-405-049		CAP,E 10-50 SME
C612	87-010-406-049		CAP,E 22-50 SME
C613	87-010-401-049		CAP,E 1-50 SME
C615	87-010-186-089		C-CAP,S 4700P-50 B
C801	87-010-555-049		CAP,E 100-10 GAS
C802	87-010-074-080		CAP,E 4.7-35 5L
C803	87-010-494-049		CAP,E 1-50 GAS
C804	87-A10-189-049		CAP,E 220-10
C805	87-010-196-089		C-CAP,S 0.1-25 F
C806	87-010-196-089		C-CAP,S 0.1-25 F
C821	87-010-312-089		C-CAP,S 15P-50 CH
C822	87-010-180-089		C-CAP,S 1500P-50 B
C823	87-010-498-040		CAP,E 10-16 5L SRE
C824	87-010-302-080		C-CAP,S 270P-50 CH
C901	87-010-405-049		CAP,E 10-50 SME
C902	87-010-405-049		CAP,E 10-50 SME
C903	87-010-408-049		CAP-E 47-50 SME
FC1	88-904-201-219		FF-CABLE 4P 1.25
FL801	86-NT1-636-019		FL,BJ451GK
J601	82-NF7-630-019		JACK,3.5 MO
J602	82-NF7-630-019		JACK,3.5 MO
L820	87-A50-052-019		COIL,CLOCK 5.76MHZ T1
LED401	87-070-199-089		LED,SLP738F-81-S-T1
LED402	87-070-199-089		LED,SLP738F-81-S-T1
LED403	87-070-199-089		LED,SLP738F-81-S-T1
LED404	87-070-199-089		LED,SLP738F-81-S-T1
LED405	87-070-199-089		LED,SLP738F-81-S-T1
LED406	87-070-199-089		LED,SLP738F-81-S-T1
LED407	87-070-199-089		LED,SLP738F-81-S-T1
LED408	87-070-199-089		LED,SLP738F-81-S-T1
LED409	87-070-199-089		LED,SLP738F-81-S-T1
LED410	87-070-199-089		LED,SLP738F-81-S-T1
LED411	87-070-201-089		LED,SLP9118C-51-S-T1
LED412	87-070-201-089		LED,SLP9118C-51-S-T1
LED413	87-070-201-089		LED,SLP9118C-51-S-T1
LED414	87-070-201-089		LED,SLP9118C-51-S-T1
LED415	87-070-201-089		LED,SLP9118C-51-S-T1
LED421	87-070-198-089		LED,SLP736A-81-S-T1
LED422	87-070-198-089		LED,SLP736A-81-S-T1
LED423	87-070-198-089		LED,SLP736A-81-S-T1
LED424	87-070-198-089		LED,SLP736A-81-S-T1
LED425	87-070-198-089		LED,SLP736A-81-S-T1
LED431	87-070-198-089		LED,SLP736A-81-S-T1
LED432	87-070-198-089		LED,SLP736A-81-S-T1
LED433	87-070-198-089		LED,SLP736A-81-S-T1
LED434	87-070-198-089		LED,SLP736A-81-S-T1
LED435	87-070-198-089		LED,SLP736A-81-S-T1
LED436	87-A40-188-089		LED,SLZ736A-17-S-T2
LED437	87-A40-188-089		LED,SLZ736A-17-S-T2
LED438	87-070-200-080		LED,SLP-636C-81-S-T1 ORN
LED439	87-070-200-080		LED,SLP-636C-81-S-T1 ORN
LED440	87-070-200-080		LED,SLP-636C-81-S-T1 ORN
LED441	87-070-200-080		LED,SLP-636C-81-S-T1 ORN
LED442	87-070-200-080		LED,SLP-636C-81-S-T1 ORN
LED443	87-070-200-080		LED,SLP-636C-81-S-T1 ORN
⚠PR465	87-A90-247-080		PROTECTOR,0.315A 60V 491
S920	87-A90-095-089		SW,TACT EVQ11G04M
S921	87-A90-095-089		SW,TACT EVQ11G04M
S922	87-A90-095-089		SW,TACT EVQ11G04M
S923	87-A90-095-089		SW,TACT EVQ11G04M
S924	87-A90-095-089		SW,TACT EVQ11G04M
S925	87-A90-095-089		SW,TACT EVQ11G04M
S926	87-A90-095-089		SW,TACT EVQ11G04M
S927	87-A90-095-089		SW,TACT EVQ11G04M

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
S928	87-A90-095-089		SW,TACT EVQ11G04M
S932	87-A90-095-089		SW,TACT EVQ11G04M
S933	87-A90-095-089		SW,TACT EVQ11G04M
S934	87-A90-095-089		SW,TACT EVQ11G04M
S935	87-A90-095-089		SW,TACT EVQ11G04M
S936	87-A90-095-089		SW,TACT EVQ11G04M
VR101	86-NT1-634-010		VR,RTRY 100KW -L20
VR601	87-A90-124-019		VR,RTRY 10KA L20

MVR C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C201	87-010-545-040		CAP,E 0.22-50 SME
C202	87-010-545-040		CAP,E 0.22-50 SME
C203	87-016-281-040		CAP,E 4.7-50 BP SME
C205	87-010-263-089		CAP,E 100-10 SME 5X11
C206	87-010-263-089		CAP,E 100-10 SME 5X11
C207	87-010-318-089		C-CAP,S 47P-50 CH
C208	87-010-318-089		C-CAP,S 47P-50 CH
C209	87-A10-229-080		C-CAP,S 0.68-10 K W5R
C210	87-010-197-089		C-CAP,S 0.01-25 B
C211	87-010-179-089		C-CAP,S 1200P-50 B
C212	87-010-196-089		C-CAP,S 0.1-25 F
C215	87-010-196-089		C-CAP,S 0.1-25 F
C216	87-010-187-089		C-CAP,S 5600P-50 B
C217	87-010-182-089		C-CAP,S 2200P-50 B
C218	87-012-393-089		C-CAP,S 0.22-16,R,K
C219	87-010-194-089		C-CAP,S 0.047-25 F
C220	87-010-181-080		C-CAP,S 1800P-50 K B
C221	87-010-196-089		C-CAP,S 0.1-25 F
C222	87-010-179-089		C-CAP,S 1200P-50 B
C223	87-010-177-089		C-CAP,S 820P-50 SL
C224	87-018-134-080		CAP,TC U 0.01-16 N Y UP050
C231	87-010-176-080		C-CAP,S 680P-50 J SL
C232	87-010-176-080		C-CAP,S 680P-50 J SL
C237	87-016-456-040		CAP,E 22-16 LLA
C238	87-010-384-040		CAP,E 100-25 SME
C239	87-010-196-080		C-CAP,S 0.1-25 Z F
C240	87-010-260-040		CAP,E 47-25 SME
C242	87-016-472-040		CAP,E 22-16 K SME
C243	87-010-263-040		CAP,E 100-10 SME
C244	87-016-081-080		C-CAP,S 0.1-16 K R
C245	87-010-405-040		CAP,E 10-50 SME
C246	87-010-405-040		CAP,E 10-50 SME
C247	87-010-405-040		CAP,E 10-50 SME
C248	87-010-405-040		CAP,E 10-50 SME
C249	87-010-405-040		CAP,E 10-50 SME
C250	87-016-251-040		CAP,E 220-16 SMG
C251	87-012-140-080		C-CAP,S 470P-50 J CH
C252	87-010-186-080		C-CAP,S 4700P-50 K B
C253	87-010-187-080		C-CAP,S 5600P-50 K B
C256	87-012-394-080		C-CAP, 0.68-16 K W5R CM/CB
C257	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C258	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C259	87-010-404-040		CAP,E 4.7-50 SME
C260	87-010-404-040		CAP,E 4.7-50 SME
C261	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C262	87-012-393-080		C-CAP,S 0.22-16 K W5R CM/CB
C263	87-016-081-080		C-CAP,S 0.1-16 K R
C266	87-016-081-080		C-CAP,S 0.1-16 K R
C267	87-016-081-080		C-CAP,S 0.1-16 K R
C270	87-016-081-080		C-CAP,S 0.1-16 K R
C280	87-010-196-089		C-CAP,S 0.1-25 F
C281	87-010-402-040		CAP,E 2.2-50 SME
C282	87-010-402-040		CAP,E 2.2-50 SME
C283	87-010-400-040		CAP,E 0.47-50 SME
C284	87-010-400-040		CAP,E 0.47-50 SME
C285	87-010-263-089		CAP,E 100-10 SME 5X11
C286	87-010-384-089		CAP,E 100-25 SME
C287	87-010-322-080		C-CAP,S 100P-50 J CH
C288	87-010-322-080		C-CAP,S 100P-50 J CH
C301	87-010-402-049		CAP,E 2.2-50 SME
C302	87-010-402-049		CAP,E 2.2-50 SME

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C303	87-010-404-049		CAP,E 4.7-50 SME
C304	87-010-404-049		CAP,E 4.7-50 SME
L201	87-005-481-089		COIL,47UH J FLR50
MVR281	86-NT1-632-010		VR,MOT 50KBX4 -L20
R257	87-025-407-080		RES,M/F 100K-1/8W F

TRAY C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
S937	87-A90-095-089		SW,TACT EVQ11G04M
S938	87-A90-095-089		SW,TACT EVQ11G04M
S939	87-A90-095-089		SW,TACT EVQ11G04M
S940	87-A90-095-089		SW,TACT EVQ11G04M
S941	87-A90-095-089		SW,TACT EVQ11G04M
S942	87-A90-095-089		SW,TACT EVQ11G04M
S945	87-036-110-019		SW,PUSH SPPB 62
S946	87-A90-095-089		SW,TACT EVQ11G04M
S947	87-A90-095-089		SW,TACT EVQ11G04M
S948	87-A90-095-089		SW,TACT EVQ11G04M
S949	87-A90-095-089		SW,TACT EVQ11G04M
S950	87-A90-095-089		SW,TACT EVQ11G04M
S951	87-A90-095-089		SW,TACT EVQ11G04M
S952	87-A90-095-089		SW,TACT EVQ11G04M
S953	87-A90-095-089		SW,TACT EVQ11G04M
S954	87-A90-095-089		SW,TACT EVQ11G04M
S955	87-036-110-019		SW,PUSH SPPB 62

AC-2 C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
⚠PR101	87-A90-195-089		PROTECTOR 7A125V491
⚠PR102	87-A90-195-089		PROTECTOR 7A125V491

PT-H C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
⚠	87-033-147-019		CLAMP,FUSE
⚠	82-304-743-019		TERMINAL 1P
⚠F101	87-035-193-010		FUSE,5A 250V T 218
⚠PT103	86-NT1-626-010		PT,6NT1PR-HR
⚠SW101	87-A90-165-010		SW,SL 1-2-3 SWS2301

MOTOR C.B

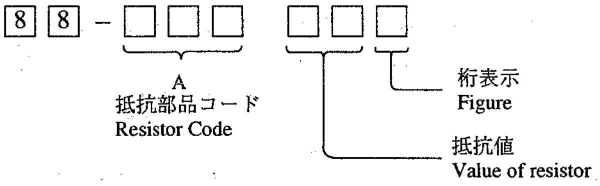
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C970	87-010-263-089		CAP,E 100-10 SME 5X11
C971	87-010-263-089		CAP,E 100-10 SME 5X11
M971	87-045-383-010		MOT,M9I T2

R-AMP C.B

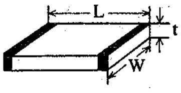
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C701	87-012-368-080		C-CAP,S 0.1-50 Z F
C702	87-012-368-080		C-CAP,S 0.1-50 Z F
C703	87-010-398-090		CAP,E 2200-35 SME
C704	87-010-398-090		CAP,E 2200-35 SME
C705	87-010-401-040		CAP,E 1-50 SME
C706	87-010-194-080		C-CAP,S 0.047-25 K F
C707	87-012-140-080		C-CAP,S 470P-50 J CH
C708	87-012-140-080		C-CAP,S 470P-50 J CH
C709	87-010-402-040		CAP,E 2.2-50 SME
C710	87-010-402-040		CAP,E 2.2-50 SME
C711	87-010-405-040		CAP,E 10-50 SME
C712	87-010-405-040		CAP,E 10-50 SME
C715	87-010-147-080		C-CAP,S 3P-50 C CH GRM
C716	87-010-147-080		C-CAP,S 3P-50 C CH GRM
C717	87-010-993-080		C-CAP,S 0.056-25 J B
C718	87-010-993-080		C-CAP,S 0.056-25 J B
C719	87-010-196-080		C-CAP,S 0.1-25 Z F
C720	87-010-196-080		C-CAP,S 0.1-25 Z F
C721	87-010-193-080		C-CAP,S 0.033-25 K F
C722	87-010-193-080		C-CAP,S 0.033-25 K F
C723	87-010-197-080		C-CAP,S 0.01-25 K B
FC2	88-906-101-110		FF-CABLE, 6P 1.25
J701	87-099-803-010		JACK,PIN 3P OWR
L701	87-003-383-010		COIL,1UH K
L702	87-003-383-010		COIL,1UH K
R707	87-022-050-080		RES,M/F 0.22-1W J
R708	87-022-050-080		RES,M/F 0.22-1W J

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

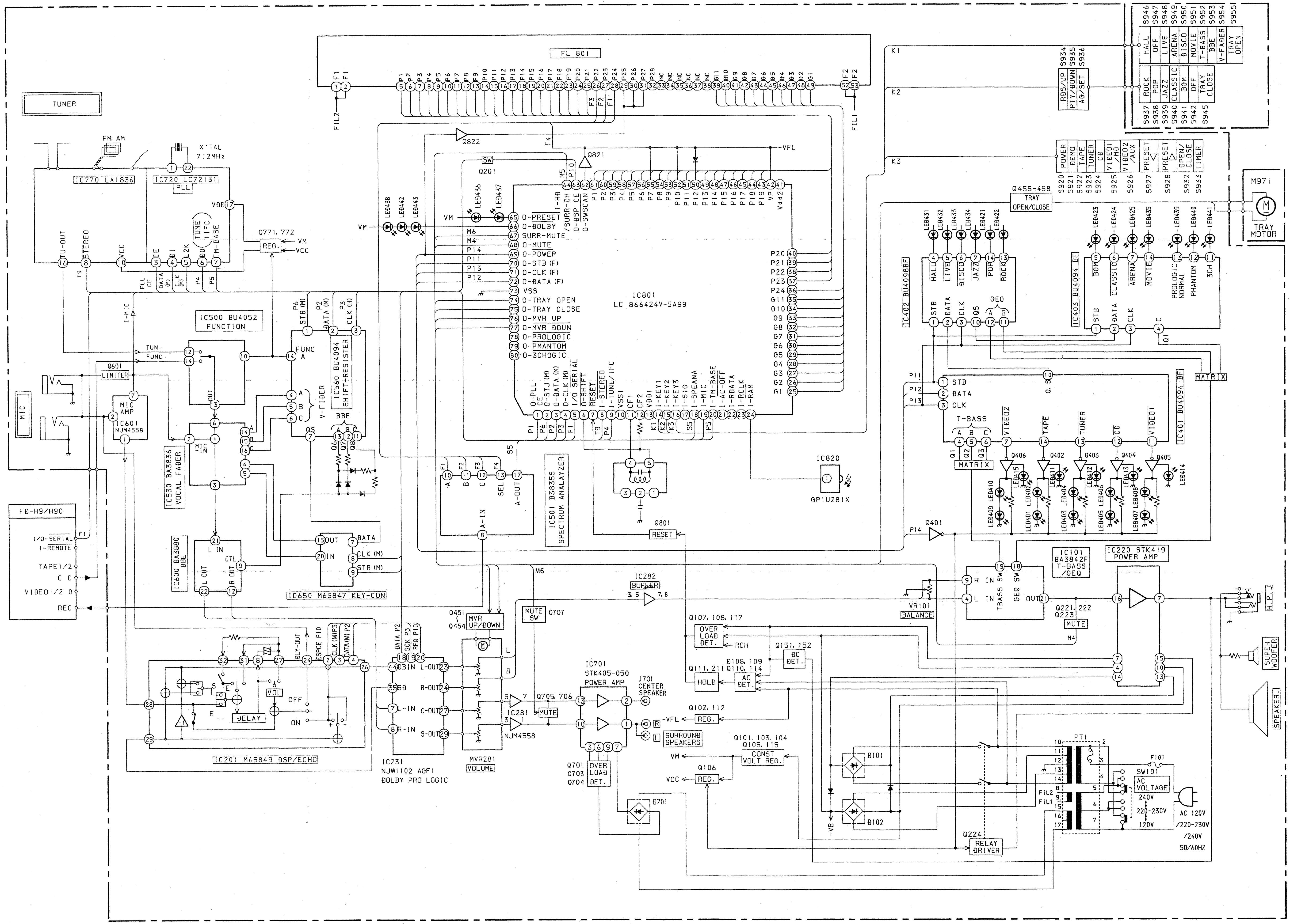
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



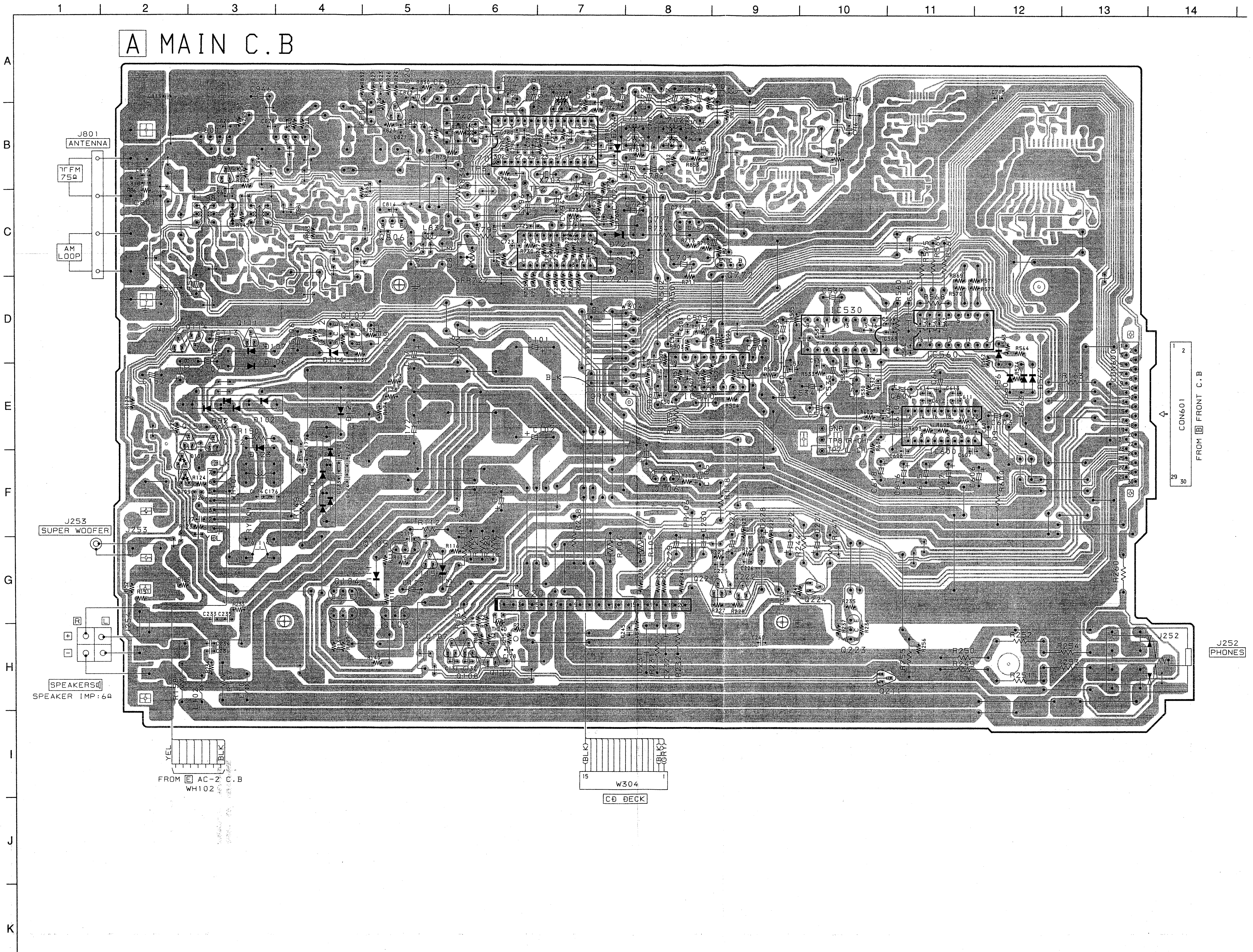
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

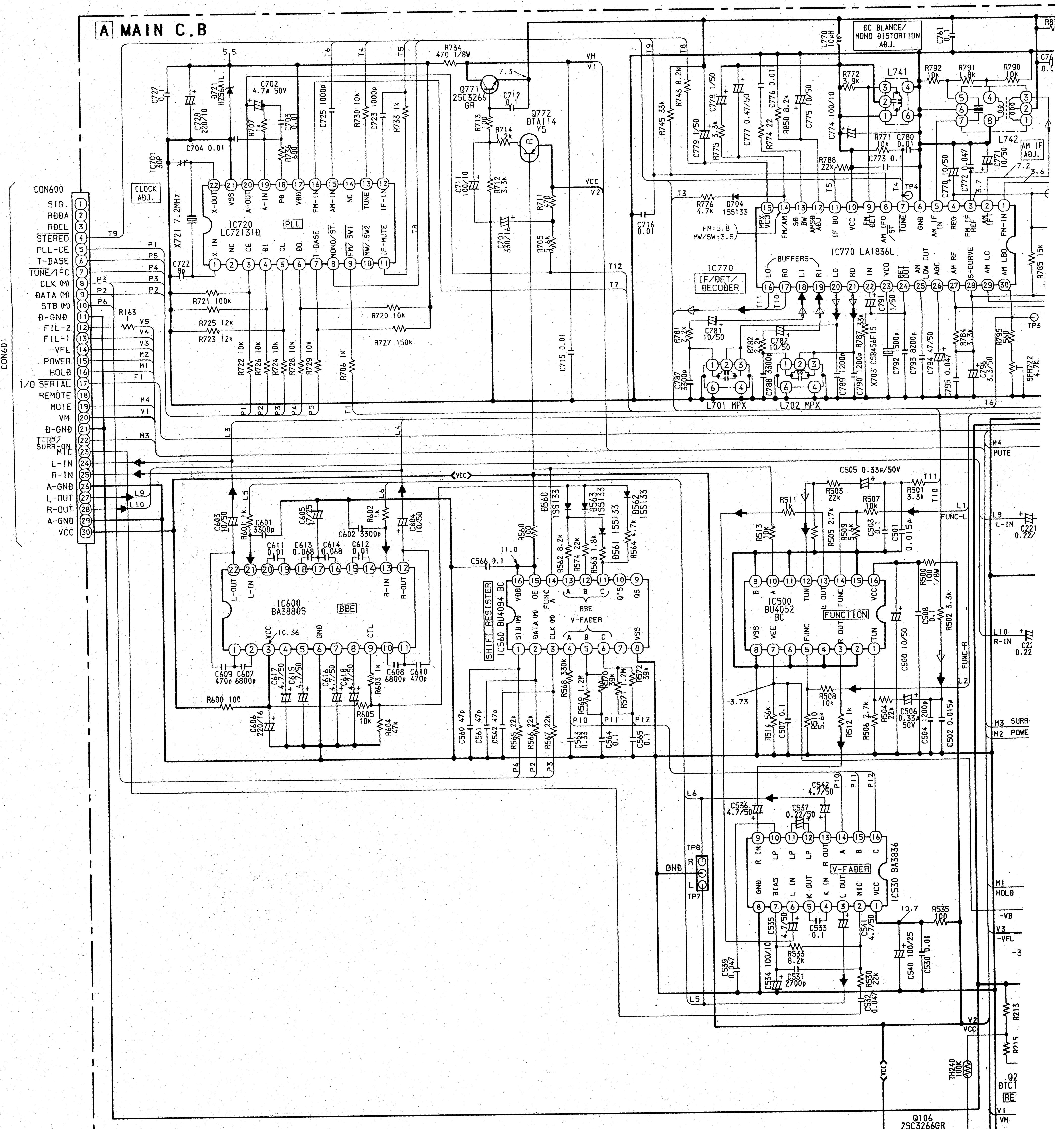
BLOCK DIAGRAM


FL 801
TUNER
FM, AM
X'TAL 7.2MHz
IC770 LA1836
IC720 LC72131
PLL
Q771, 772
REG.
VM
VCC
IC500 BU4052
FUNCTION
TUN
FUNC
Q601
LIMITER
MIC AMP
IC601 NJM4558
MIC
IC530 BA3836
VOCAL FADER
MIC IN
IC560 BU4094
SHIFT-RESISTER
V-FIDER
BBE
IC600 BA3880
BBE
L IN
CTL
L OUT
R OUT
IC650 M65847 KEY-CON
DATA
CLK (M)
STB (M)
FD-H9/H90
I/O-SERIAL
I-REMOTE
TAPE1/2
CD
VIDEO1/2
REC
IC201 M65849 DSP/ECHO
DELAY
VOL
OFF
ON
IC231
NJW1102 AGF1
DOLBY PRO LOGIC
L-OUT
R-OUT
C-OUT
S-OUT
L-IN
R-IN
Q451
Q454
MVR UP/DOWN
MVR281
VOLUME
MUTE SW
Q707
IC281
NJM4558
Q705, 706
MUTE
IC701
STK405-050
POWER AMP
J701
CENTER SPEAKER
SURROUND SPEAKERS
Q701
Q703
Q704
OVER LOAD DET.
D701
IC501 BA3835S
SPECTRUM ANALYZER
SEL
A-OUT
A-IN
Q822
Q821
Q201
SW
IC801
LC 866424V-5A99
O-PRESET
O-DOLBY
SURR-MUTE
O-MUTE
O-POWER
O-STB (F)
O-CLK (F)
O-DATA (F)
VSS
O-TRAY OPEN
O-TRAY CLOSE
O-MVR UP
O-MVR DOWN
O-PROLOGIC
O-PMANTOM
O-3CHOGIC
VFL
IC820
GP1U281X
Q801
RESET
IC282
BUFFER
Q107, 108, 117
OVER LOAD DET.
RCH
Q151, 152
DC DET.
Q108, 109
Q110, 114
Q111, 211
HOLD
AC DET.
Q102, 112
REG.
Q101, 103, 104
Q105, 115
CONST VOLT REG.
Q106
D101
D102
-VB
PT1
F101
SW101
AC VOLTAGE
240V
220-230V
120V
AC 120V
/220-230V
/240V
50/60HZ
Q224
RELAY DRIVER
FIL1
FIL2
IC101
BA3842F
T-BASS
/GEQ
R IN
L IN
VR101
BALANCE
Q221, 222
Q223
MUTE
IC220 STK419
POWER AMP
H.P.J
SUPER WOOFER
SPEAKER
IC402 BU4098BF
IC403 BU4094 BF
IC401 BU4094 BF
MATRIX
T-BASS
VIDEO2
TAPE
TUNER
CD
VIDEO1
Q406
Q402
Q403
Q404
Q405
Q401
HALL
LIVE
DISCO
JAZZ
POP
ROCK
BGM
CLASSIC
ARENA
MOVIE
PROLOGIC NORMAL
PHANTOM
3CH
Q455-458
TRAY OPEN/CLOSE
M971
TRAY MOTOR
K1
K2
K3
RDS/UP S934
PTY/DOWN S935
AG/SET S936
S937 ROCK
S938 POP
S939 JAZZ
S940 CLASSIC
S941 BGM
S942 OFF
S945 TRAY CLOSE
S946 HALL
S947 OFF
S948 LIVE
S949 ARENA
S950 DISCO
S951 MOVIE
S952 T-BASS
S953 BBE
S954 V-FADER
S955 TRAY OPEN
S920 POWER
S921 DEMO
S922 TAPE
S923 TUNER
S924 CD
S925 VIDEO1 /MD
S926 VIDEO2 /AUX
S927 PRESET ▽
S928 PRESET △
S932 OPEN/CLOSE
S933 TIMER

WIRING-1 (MAIN)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
A MAIN C.B
J801
ANTENNA
FM 75Ω
AM LOOP
J253
SUPER WOOFER
R
L
+
−
SPEAKERS
SPEAKER IMP:6Ω
YEL
BLK
FROM E AC-2 C.B
WH102
(BLK)
(GRY)
15
1
W304
CD DECK
J252
PHONES
CON601
FROM B FRONT C.B
1
2
29
30
IC530
IC560
IC500
IC600
IC220
Q805
Q806
Q772
Q223
Q224
Q211
Q106
Q108
L832
GND
TP8
TP7
BLK
GRY

SCHEMATIC DIAGRAM-1 (MAIN)


A MAIN C.B
FROM B FRONT C.B CON601
CON600
SIG.
RDDA
RDCL
STEREO
PLL-CE
T-BASE
TUNE/IFC
CLK (M)
DATA (M)
STB (M)
D-GND
FIL-2
FIL-1
-VFL
POWER
HOLD
I/O SERIAL
REMOTE
MUTE
VM
D-GND
I-HP7
SURR-ON
MIC
L-IN
R-IN
A-GND
L-OUT
R-OUT
A-GND
VCC
CLOCK ADJ.
IC720 LC72131D PLL
X721 7.2MHz
Q771 2SC3266 GR
Q772 DTA114 YS
IC770 LA1836L
IC770 IF/DET/ DECODER
BUFFERS
DC BLANCE/ MONO DISTORTION ADJ.
AM IF ADJ.
L741
L742
L701 MPX
L702 MPX
FM:5.8
MW/SW:3.5
IC600 BA3880S BBE
SHIFT RESISTER IC560 BU4094 BC
BBE
V-FADER
IC500 BU4052 BC
FUNCTION
IC530 BA3836
V-FADER
TP8
TP7
GND
Q106 2SC3266GR
REG
POWER
VCC
M4 MUTE
M3 SURR
M2 POWER
M1 HOLD
-VB
-VFL

IC560

BBE			
	A	B	C
OFF	1	1	1
LEVEL1	0	1	1
LEVEL2	0	0	1
LEVEL3	1	0	0
LEVEL4	0	0	0

IC530

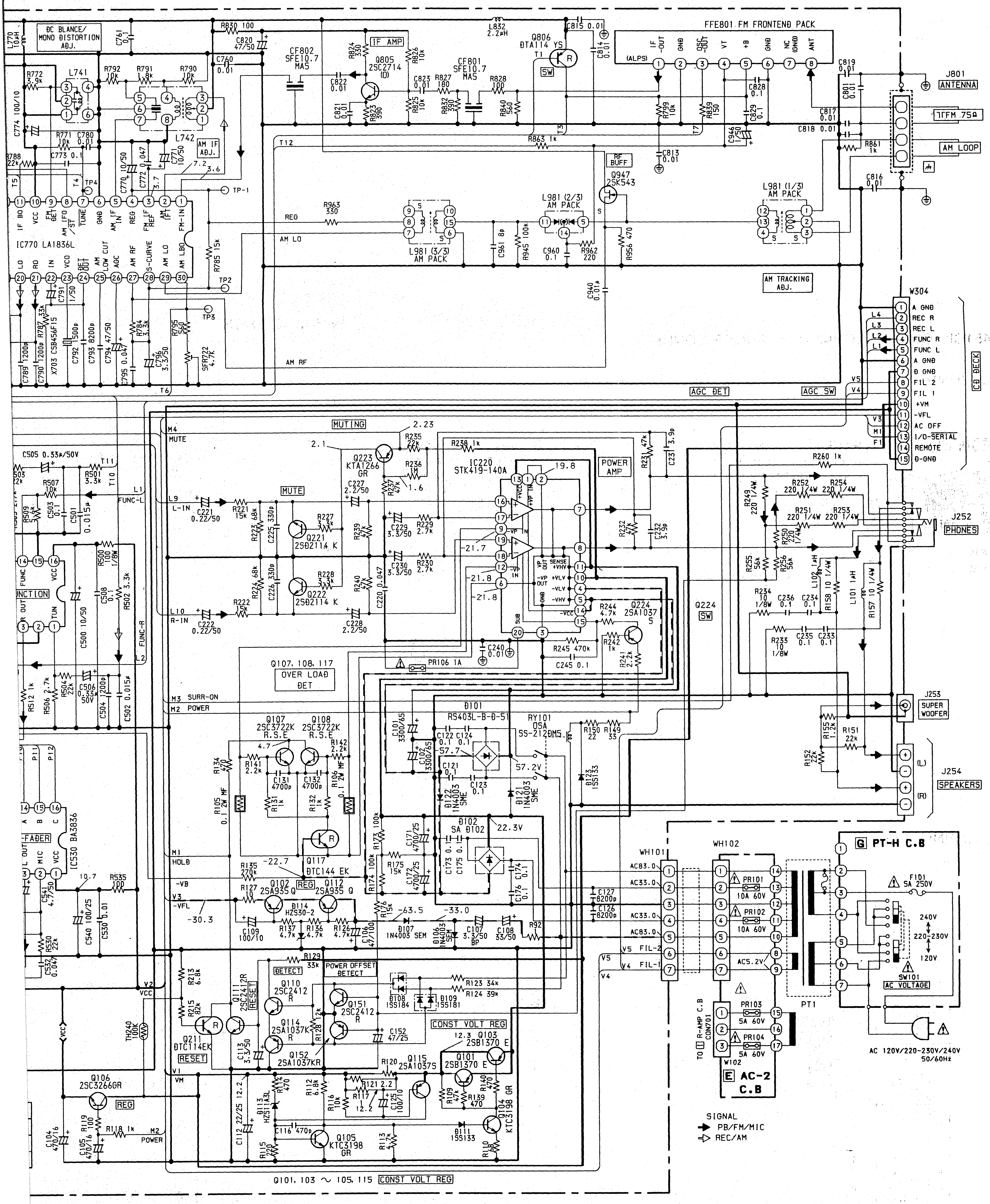
V-FADER		
	VB	VC
MUTE	0	0
V.F	0	1
L	1	0
NORM	1	1

IC720

	2BAND		3BAND			3BAND		
	AM	FM	LW	MW	FM	MW	SW	FM
T1 9	H	L	H	H	L	H	L	L
T2 10	L	L	H	L	L	L	H	L

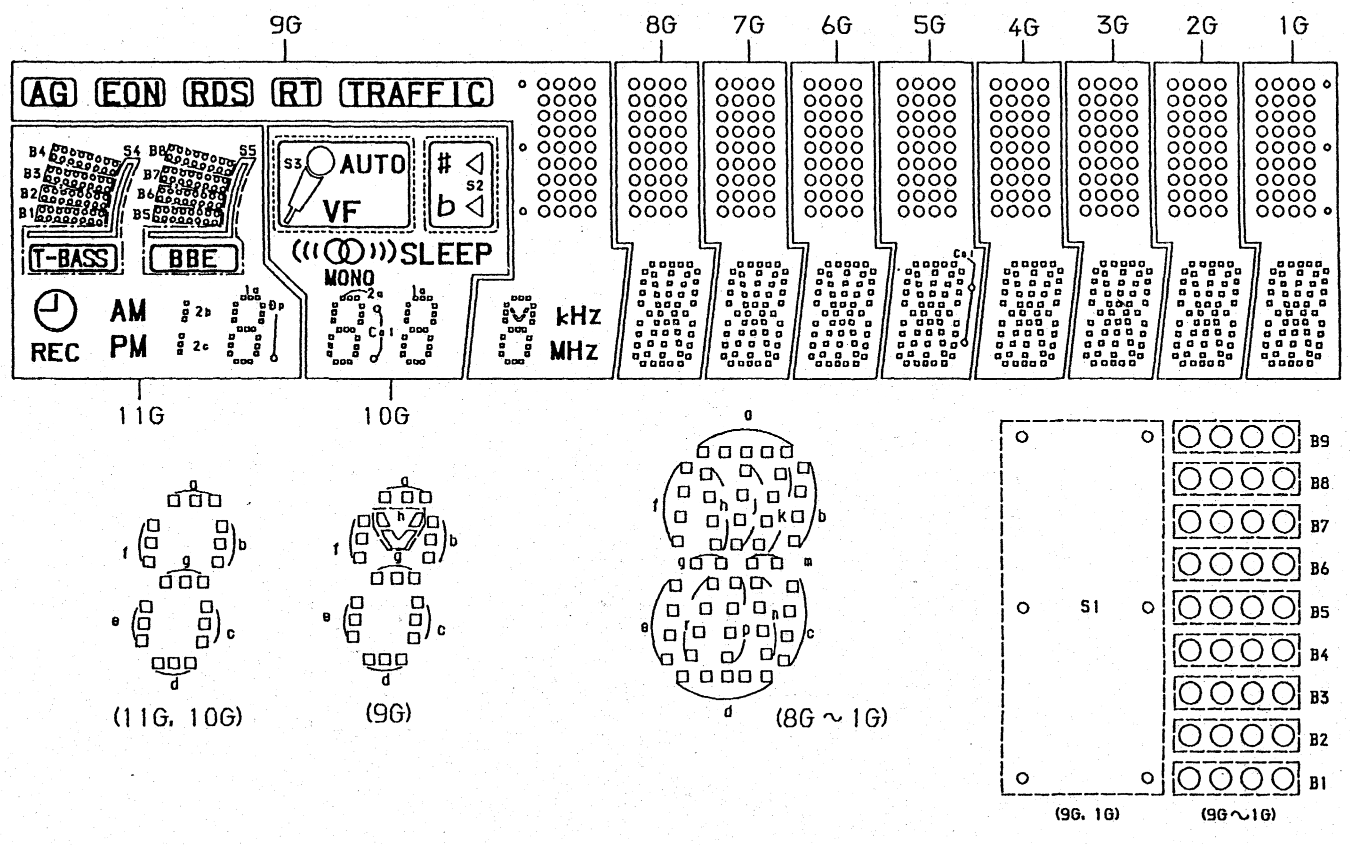
IC500

FUNCTION		
	B	A
TUN:	0	0
FUNC.	0	1


FFE801 FM FRONTEND PACK
(ALPS)
IF-OUT
GND
OSC-OUT
VT
+B
GND
NC (GND)
ANT
J801 ANTENNA
FM 75Ω
AM LOOP
DC BLANCE/ MONO DISTORTION ADJ.
IF AMP
Q805 2SC2714 (O)
Q806 DTA114 YS
CF802 SFE10.7 MA5
CF801 SFE10.7 MA5
L832 2.2μH
L741
L742 AM IF ADJ.
IC770 LA1836L
RF BUFF
Q947 2SK543
L981 (1/3) AM PACK
L981 (2/3) AM PACK
L981 (3/3) AM PACK
AM TRACKING ADJ.
AM LO
AM RF
REG
AGC DET
AGC SW
W304
A GND
REC R
REC L
FUNC R
FUNC L
A GND
D GND
FIL 2
FIL 1
+VM
-VFL
AC OFF
I/O-SERIAL
REMOTE
D-GND
CD DECK
MUTING
Q223 KTA1266 GR
MUTE
Q221 2SD2114 K
Q222 2SD2114 K
L-IN
R-IN
IC220 STK419-140A
POWER AMP
Q224 2SA1037 S
Q224 SW
J252 PHONES
J253 SUPER WOOFER
J254 SPEAKERS
(L)
(R)
PR106 1A
Q107, 108, 117 OVER LOAD DET
Q107 2SC3722K R.S.E
Q108 2SC3722K R.S.E
Q117 DTC144 EK
Q102 2SA935 Q
Q112 2SA935 Q
REG
D101 RS403L-B-D-51
RY101 DSA SS-212DM5
D102 SA D102
D122 1N4003 SME
D121 1N4003 SME
D123 1SS133
D107 1N4003 SEM
D106 1N4003 SEM
SURR-ON
POWER
HOLD
-VB
-VFL
MUTE
DETECT
POWER OFFSET DETECT
Q110 2SC2412 R
Q111 2SC2412R RESET
Q151 2SC2412 R
Q114 2SA1037KR
Q152 2SA1037KR
Q211 DTC114EK RESET
D108 1SS184
D109 1SS181
CONST VOLT REG
Q101 2SB1370 E
Q103 2SB1370 E
Q115 2SA1037S
Q104 KTC3198 GR
Q105 KTC3198 GR
D111 1SS133
D113 HZS11A3L
D114 HZS30-2
Q106 2SC3266GR
REG
TH240 100K
Q101, 103 ~ 105, 115 CONST VOLT REG
WH101
WH102
PR101 10A 60V
PR102 10A 60V
PR103 5A 60V
PR104 5A 60V
AC83.0
AC33.0
AC5.2V
FIL-2
FIL-1
PT1
G PT-H C.B
F101 5A 250V
240V
220-230V
120V
SW101 AC VOLTAGE
AC 120V/220-230V/240V 50/60Hz
TO I R-AMP C.B CON701
W102
E AC-2 C.B
IC530 BA3836
FADER
FUNCTION
SIGNAL
PB/FM/MIC
REC/AM

FL (BJ451GK) GRID ASSIGNMENT ⁄ ANODE CONNECTION

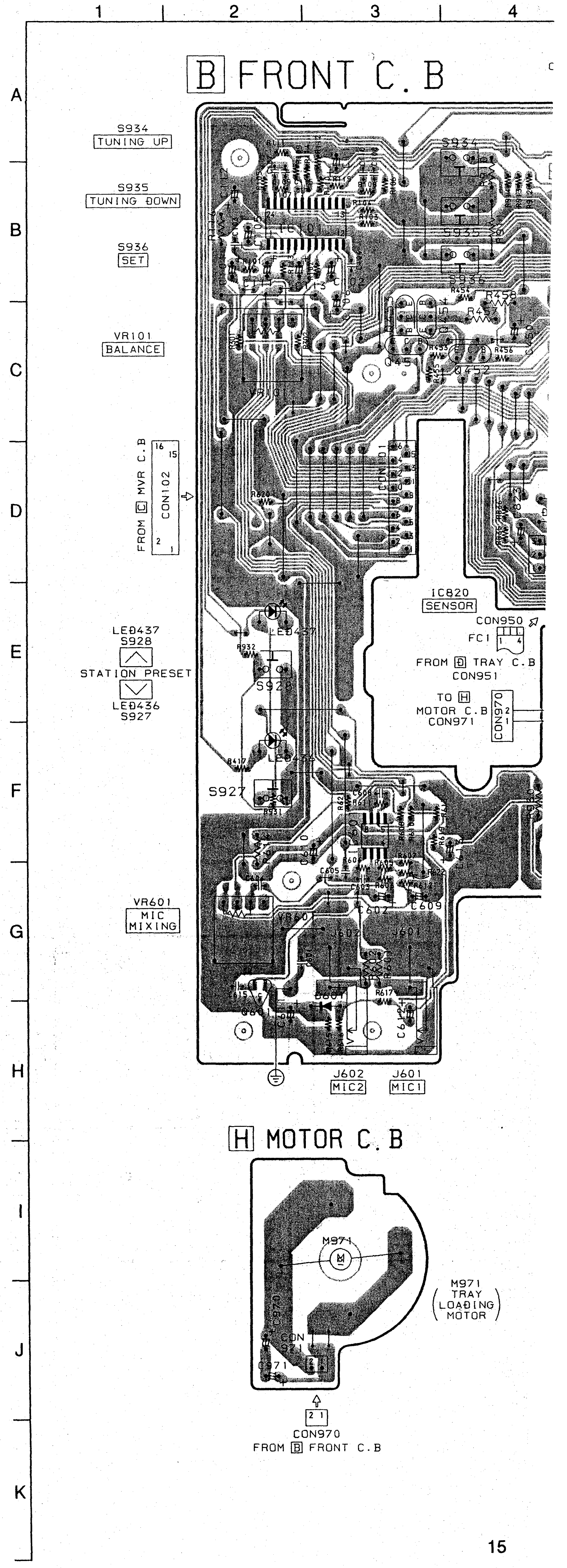
GRID ASSIGNMENT


9G
8G
7G
6G
5G
4G
3G
2G
1G
AG
EON
RDS
RT
TRAFFIC
S4
S5
B4
B3
B2
B1
B8
B7
B6
B5
T-BASS
BBE
S3
AUTO
VF
S2
((( )))SLEEP
MONO
AM
PM
REC
kHz
MHz
11G
10G
(11G, 10G)
(9G)
(8G ~ 1G)
S1
B9
(9G, 1G)
(9G~1G)

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	2b, 2c	S3	B9	B9	B9	B9	B9	B9	B9	B9	B9
P2	1a	AUTO	B8	B8	B8	B8	B8	B8	B8	B8	B8
P3	1b	◁(High)	B7	B7	B7	B7	B7	B7	B7	B7	B7
P4	1f	◁ (Low)	B6	B6	B6	B6	B6	B6	B6	B6	B6
P5	1g	(((ꝏ)))	B5	B5	B5	B5	B5	B5	B5	B5	B5
P6	1c	SLEEP	B4	B4	B4	B4	B4	B4	B4	B4	B4
P7	1e	MONO	B3	B3	B3	B3	B3	B3	B3	B3	B3
P8	1d	○	B2	B2	B2	B2	B2	B2	B2	B2	B2
P9	–	2a	B1	B1	B1	B1	B1	B1	B1	B1	B1
P10	–	2b	TRAFFIC	a	a	a	a	a	a	a	a
P11	B8	2f	R T	h	h	h	h	h	h	h	h
P12	B7	2g	RDS	j	j	j	j	j	j	j	j
P13	B6	2c	EON	k	k	k	k	k	k	k	k
P14	B5	2e	A G	b	b	b	b	b	b	b	b
P15	B4	2d	h	f	f	f	f	f	f	f	f
P16	B3	1a	a	m	m	m	m	m	m	m	m
P17	B2	1b	b	g	g	g	g	g	g	g	g
P18	B1	1f	f	c	c	c	c	c	c	c	c
P19	AM	1g	g	e	e	e	e	e	e	e	e
P20	PM	1c	c	r	r	r	r	r	r	r	r
P21	◷	1e	e	p	p	p	p	p	p	p	p
P22	REC	1d	d	n	n	n	n	n	n	n	n
P23	–	Col (Low)	KHz	d	d	d	d	d	d	d	d
P24	Dp	Col (High)	MHz	–	–	–	col	–	–	–	–
P25	–	–	S1	–	–	–	–	–	–	–	S1
P26	S4	–	–	–	–	–	–	–	–	–	–
P27	S5	–	–	–	–	–	–	–	–	–	–
P28	–	S2	–	–	–	–	–	–	–	–	–

WIRING-2 (FRONT)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G
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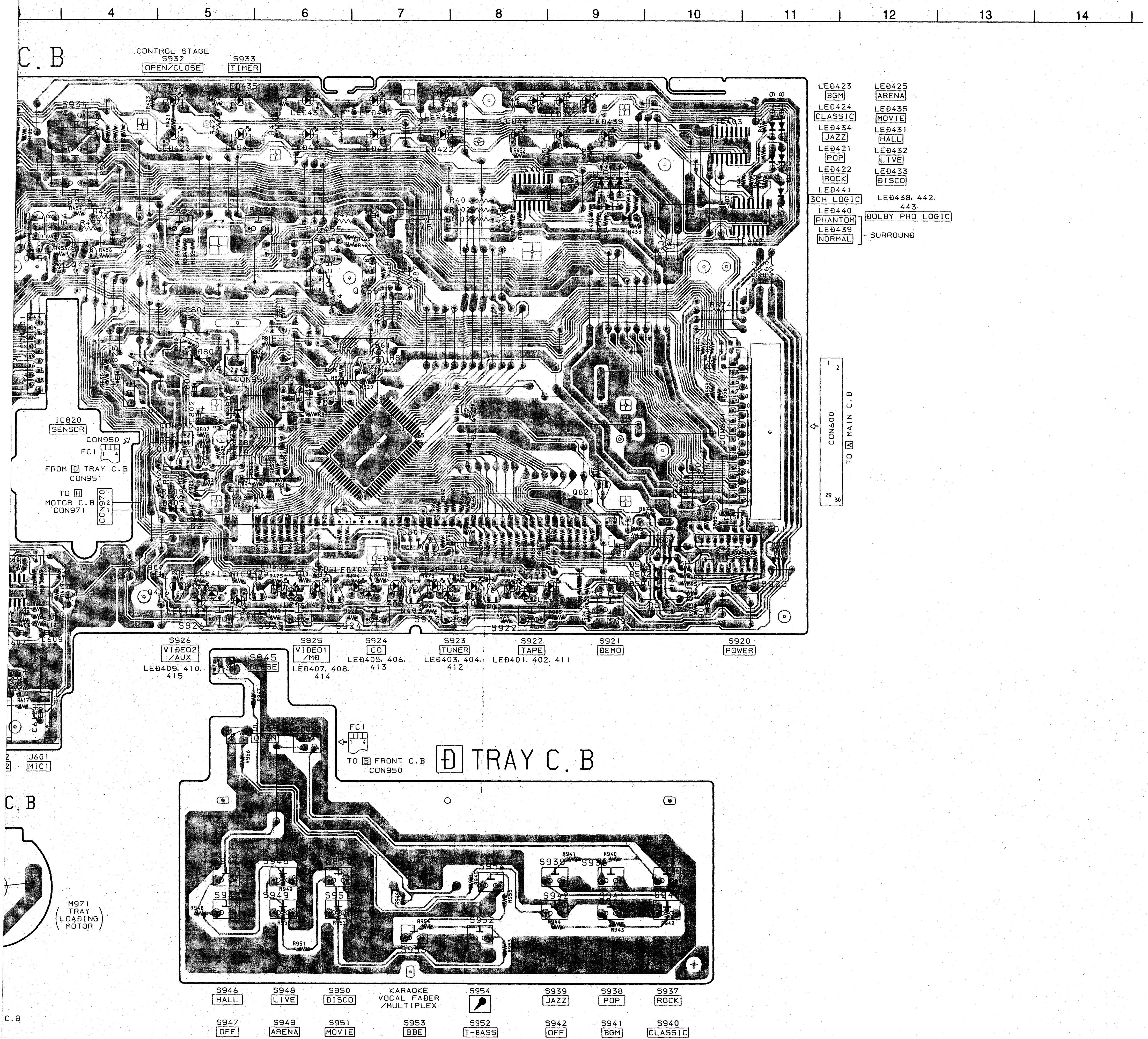
I
J
K
B FRONT C.B
S934
TUNING UP
S935
TUNING DOWN
S936
SET
VR101
BALANCE
FROM C MVR C.B
CON102
LED437
S928
STATION PRESET
LED436
S927
IC820
SENSOR
CON950
FC1
FROM D TRAY C.B
CON951
TO H MOTOR C.B
CON971
CON970
VR601
MIC MIXING
J602
MIC2
J601
MIC1
H MOTOR C.B
M971
M971
TRAY LOADING MOTOR
CON970
FROM B FRONT C.B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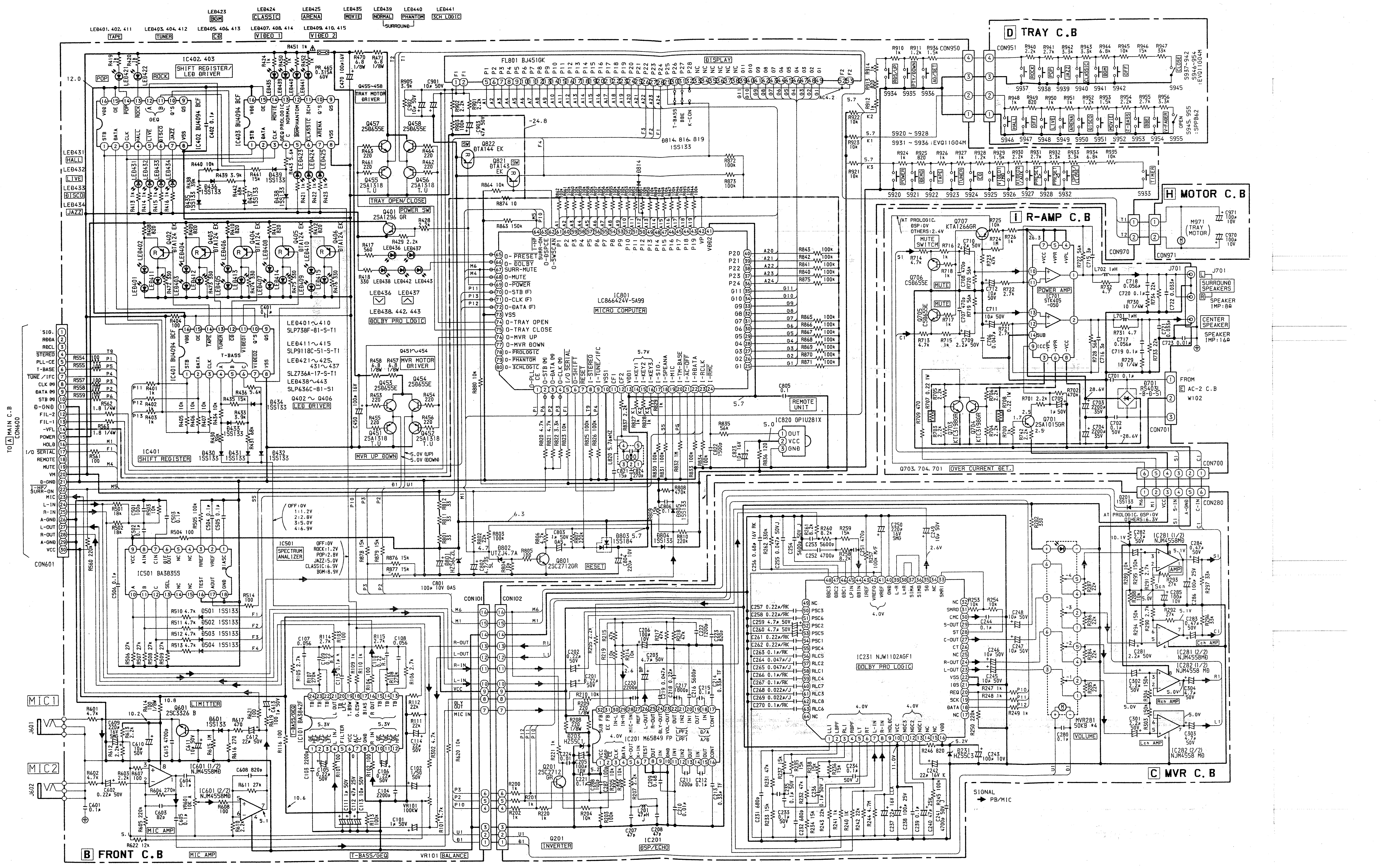
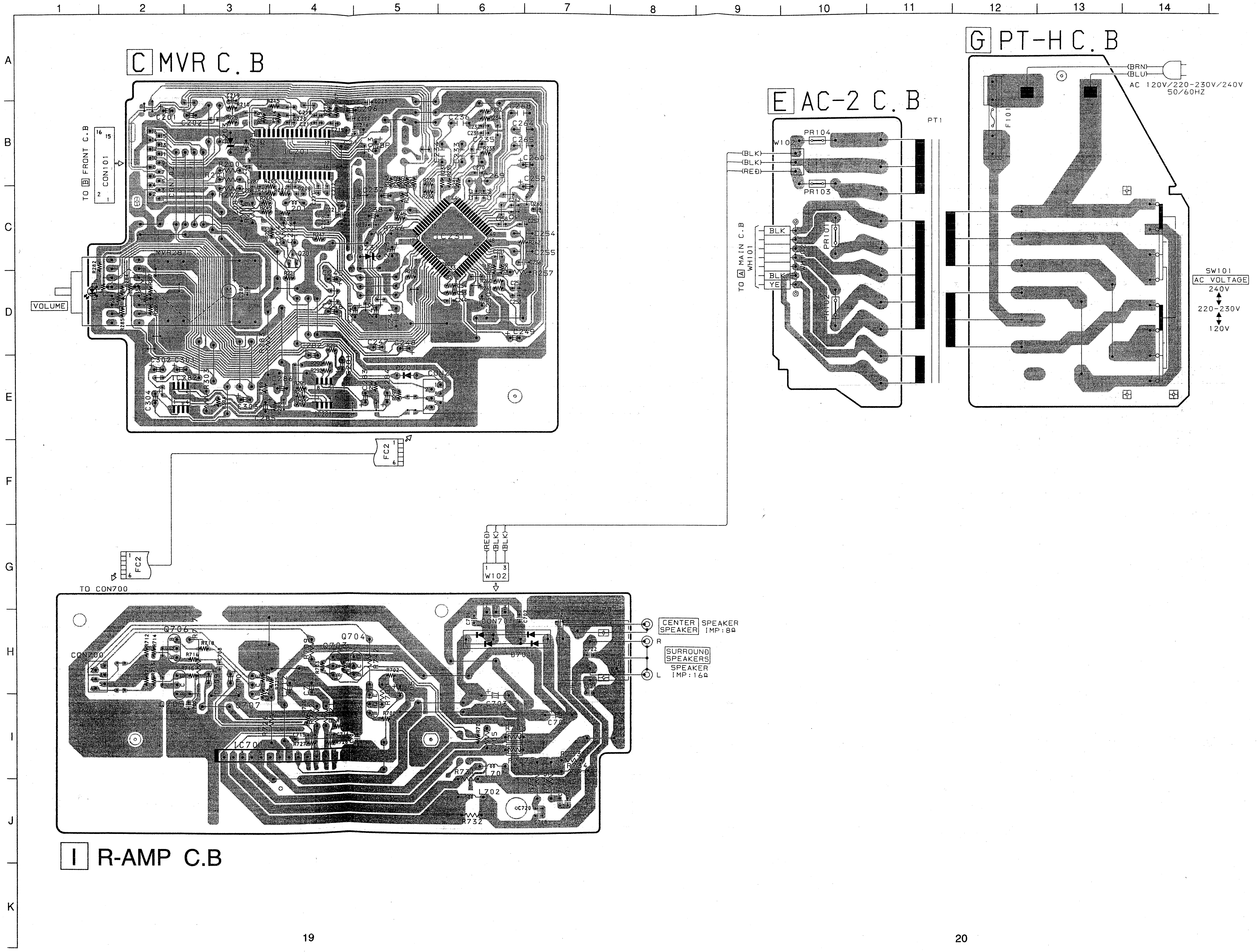
C.B
CONTROL STAGE
S932
OPEN/CLOSE
S933
TIMER
LED423
BGM
LED425
ARENA
LED424
CLASSIC
LED435
MOVIE
LED434
JAZZ
LED431
HALL
LED421
POP
LED432
LIVE
LED422
ROCK
LED433
DISCO
LED441
3CH LOGIC
LED438, 442, 443
DOLBY PRO LOGIC
LED440
PHANTOM
LED439
NORMAL
SURROUND
CON600
TO A MAIN C.B
IC820
SENSOR
CON950
FC1
FROM D TRAY C.B
CON951
TO H MOTOR C.B
CON971
CON970
IC801
S926
VIDEO2
/AUX
LED409, 410, 415
S925
VIDEO1
/MD
LED407, 408, 414
S924
CD
LED405, 406, 413
S923
TUNER
LED403, 404, 412
S922
TAPE
LED401, 402, 411
S921
DEMO
S920
POWER
S945
CLOSE
S955
OPEN
CON951
FC1
TO B FRONT C.B
CON950
D TRAY C.B
J601
MIC1
C.B
M971
TRAY
LOADING
MOTOR
S946
HALL
S948
LIVE
S950
DISCO
KARAOKE
VOCAL FADER
/MULTIPLEX
S954
S939
JAZZ
S938
POP
S937
ROCK
S947
OFF
S949
ARENA
S951
MOVIE
S953
BBE
S952
T-BASS
S942
OFF
S941
BGM
S940
CLASSIC
FRONT SURROUND
ELECTRONIC GRAPHIC EQUALIZER
C.B

SCHEMATIC DIAGRAM-2 (FRONT)


B FRONT C.B
D TRAY C.B
H MOTOR C.B
I R-AMP C.B
C MVR C.B
IC402, 403 SHIFT REGISTER/LED DRIVER
IC401 SHIFT REGISTER
FL801 BJ451GK
DISPLAY
IC801 LC866424V-5A99 MICRO COMPUTER
IC501 BA3835S
IC501 SPECTRUM ANALIZER
IC101 BA3842F T-BASS/GEQ
IC201 M65849 FP DSP/ECHO
IC231 NJW1102AGF1 DOLBY PRO LOGIC
IC601 NJM4558MD MIC AMP
IC701 STK405-050 POWER AMP
IC281 NJM4558MD
IC282 NJM4558 MD
IC820 GP1U281X REMOTE UNIT
Q801 2SC2712GR RESET
Q201 INVERTER
Q401 2SA1296 GR POWER SW
Q402 ~ Q406 LED DRIVER
Q455~458 TRAY MOTOR DRIVER
Q451~454 MVR MOTOR DRIVER
TRAY OPEN/CLOSE
MVR UP DOWN
LIMITTER
MVR281 50KB VOLUME
VR101 BALANCE
M971 TRAY MOTOR
J701 SURROUND SPEAKERS IMP: 8Ω
CENTER SPEAKER IMP: 16Ω
FROM E AC-2 C.B W102
Q703, 704, 701 OVER CURRENT DET.
TO A MAIN C.B CON600
CON601
CON101
CON102
CON700
CON280
CON950
CON951
CON970
CON971
CON701
MIC1
MIC2
J601
J602
LE0401~410 SLP738F-81-S-T1
LE0411~415 SLP9118C-51-S-T1
LE0421~425, 431~437 SLZ736A-17-S-T1
LE0438~443 SLP636C-81-51
DOLBY PRO LOGIC
TAPE
TUNER
CD
VIDEO 1
VIDEO 2
BGM
CLASSIC
ARENA
MOVIE
NORMAL
PHANTOM
3CH LOGIC
SURROUND
POP
ROCK
HALL
LIVE
DISCO
JAZZ
Lch AMP
Rch AMP
SIGNAL
PB/MIC

WIRING-3 (MVR / R-AMP / POWER)



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J
K
C MVR C. B
TO B FRONT C.B
CON101
VOLUME
MVR201
IC201
IC231
Q201
CON250
FC2
E AC-2 C. B
PT1
W101
(BLK)
(BLK)
(RED)
PR104
PR103
PR101
PR102
TO A MAIN C.B WH101
BLK
BLK
YE
G PT-H C. B
(BRN)
(BLU)
AC 120V/220-230V/240V
50/60HZ
F101
SW101
SW101
AC VOLTAGE
240V
220-230V
120V
TO CON700
(RED)
(BLK)
(BLK)
W102
CON700
CON701
Q701
Q702
Q703
Q704
Q705
Q706
Q707
IC701
L702
R732
C720
CENTER SPEAKER
SPEAKER IMP:8Ω
R
L
SURROUND SPEAKERS
SPEAKER IMP:16Ω
I R-AMP C.B

IC DESCRIPTION

IC, NJW1102F

Pin No.	Pin Name	I/O	Description
1	LLI	I	Lch BPF in.
2	LBPF	O	Lch BPF feed back out.
3	RLI	I	Rch BPF in.
4	RBPF	O	Rch BPF feed back out.
5	LT	O	Lch selector #1 out.
6	RT	O	Rch selector #1 out.
7	LIN	I	Lch signal input.
8	RIN	I	Rch signal input.
9	HOLDC	I	Auto input balance control.
10	VCC	–	Power supply.
11~13	NGC 3~1	I	Noise sequencer control.
14,15	NC	–	Not connect.
16	VDD	–	Power supply.
17	NC	–	Not used.
18	DATA	I	Serial data input.
19	SCK	I	Serial clock input.
20	REQ	I	Serial request (strobe) input.
21	IDS	I	IC select sw.
22	VSS	–	GND.
23	LOUT	O	Lch serial output.
24	ROUT	O	Rch serial output.
25	AUX1	O	AUX1 output (serial data change parallel output).
26	CT	O	Cch output (before trimmer).
27	C-OUT	O	Cch output (after trimmer).
28	ST	O	Sch output (before trimmer).
29	S-OUT	O	Sch output (after trimmer).
30	CMC	I	Center mode control.
31	SMRO	O	Sch amp (front L,R mix) output.
32	NC	–	Not used.
33	SMRI	I	Sch amp (front L,R mix) input.
34	AUX2	O	AUX2 output (serial data change parallel output).
35	SD	O	Selector #2 output (to delay IC).
36	SIMBB	I	Selector #2 input B (L-R).
37	SIMBA	I	Selector #2 input A (L+R).
38	L+R	O	L+R ch output.
39	L-R	O	L-R ch output.
40	GND	–	Gnd.
41	VREF	I	VREF in.
42	VREFG	O	Vref out.
43	IREF	I	Iref in.
44	DBIBN	O	Output to modify dolby B IC (inclused NJW1102).
45	LPIN	I	From delay input.
46~48	DBC 1~3	I	Dolby B NR control.
49	NC	–	Not used.
50~55	PSC 1~6	I	Dual time constant and threshold switches control.
56~63	RLC 1~8	I	Full-wave rectifier and log difference amp control.
64	NC	–	Not used.

See the NSX-H9/H90(S/M Code No. 09-966-141-50T)
for the IC BLOCK DIAGRAM below.

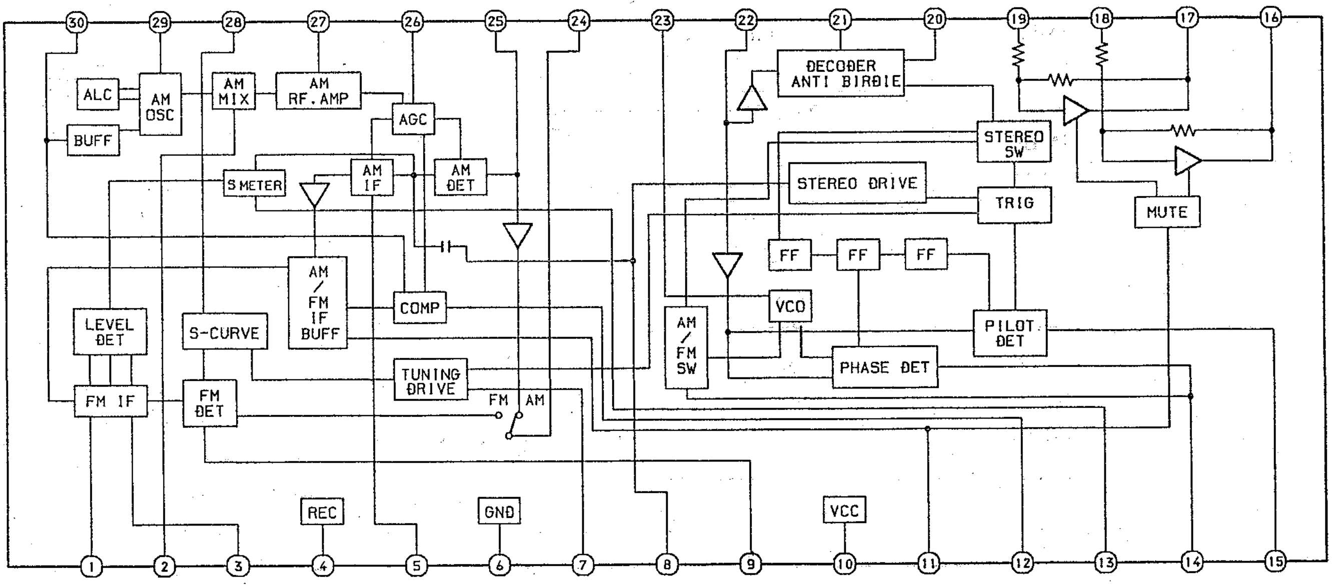
NSX-H9/H90	NSX-AVH9
M65849FP	M65849FP
BA3830S	BA3830S
BA3836	BA3836
BA3835S	BA3835S
BA3842F	BA3842F
LC7213D	LC7213D

See the NSX-H9/H90 (S/M Code No. 09-966-141-50T)
for the IC DESCRIPTION below.

NSX-H9/H90	NSX-AVH9
LC866424V-5A62	LC866424V-5A99

IC BLOCK DIAGRAM

IC, LA1836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ALC
AM OSC
BUFF
AM MIX
AM RF.AMP
AGC
S METER
AM IF
AM DET
DECODER ANTI BIRDIE
STEREO SW
STEREO DRIVE
TRIG
MUTE
AM / FM IF BUFF
COMP
FF
FF
FF
VCO
LEVEL DET
S-CURVE
AM / FM SW
PILOT DET
PHASE DET
FM IF
FM DET
TUNING DRIVE
FM
AM
REC
GND
VCC
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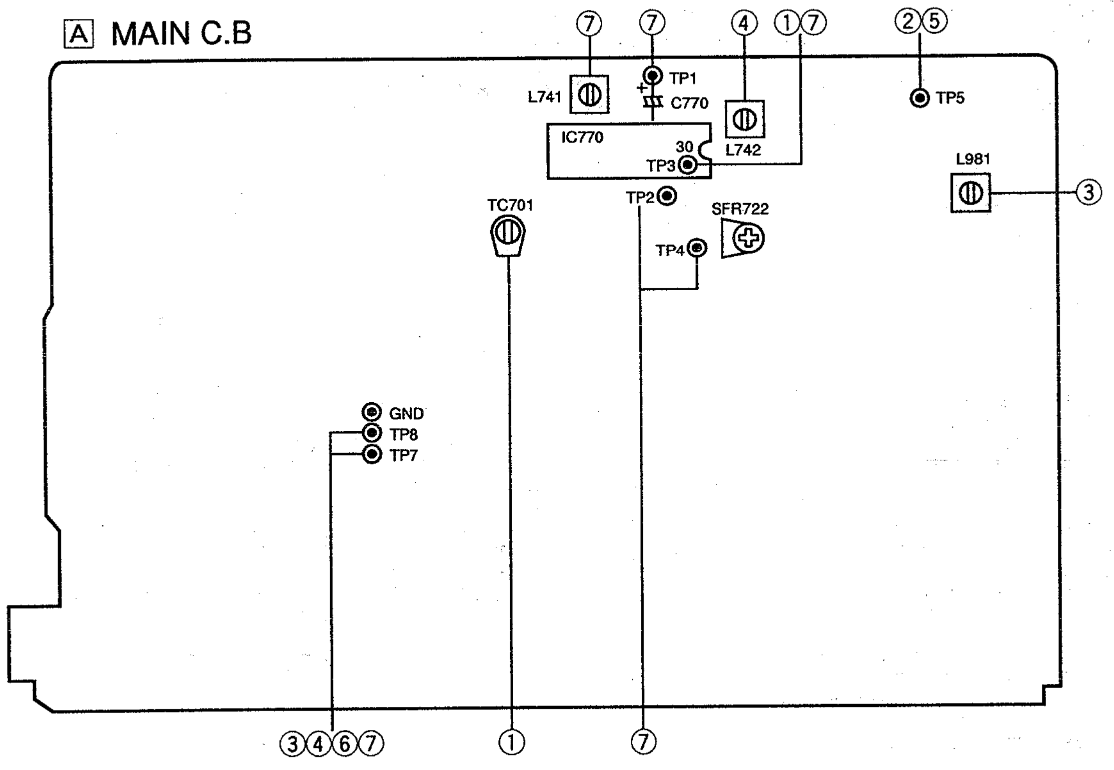
ELECTRICAL ADJUSTMENT

A MAIN C.B



TUNER SECTION

1. Clock Frequency Adjustment
   Setting: • Test point : TP3(CLK)
   • Adjustment location : TC701
   Method: Set to AM 1710kHz and adjust TC701 so that the test point becomes 2160kHz ± 0.01kHz.

2. AM VT Check
   Setting: • Test point : TP5
   Method: Set to AM 1710kHz and check the test point is 6.3 ± 1.0V.

3. AM Tracking Adjustment
   Settings: • Test point : TP7(Lch), TP8(Rch)
   • Adjustment location : L981
   Method: Set to AM 1000kHz and adjust L981 so that the test point becomes maximum.

4. AM IF Adjustment
   Setting: • Test point : TP7(Lch), TP8(Rch)
   L742 .... 450kHz

5. FM VT Check
   Setting: • Test point : TP1
   Method: Set to FM 87.5MHz and check that the test point is more than 1.5V.
   Then set to FM 108MHz and check that the test point is less than 8.2V.

6. FM Tracking Check
   Setting: • Test point : TP7(Lch), TP8(Rch)
   Method: Check that the test point is 3 ~ 12dB and distortion is less than 3% at FM98.0MHz.

7. DC Balance / MONO Distortion Adjustment
   Settings: • Test point : TP1, TP2 (DC Balance)
   TP7(Lch), TP8(ch) (Distortion)
   • Adjustment location : L741
   • Input level : 54dB
   Method: Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
   Next check that the distortion is less than 1.3%.

PRACTICAL SERVICE FIGURE

TUNER SECTION

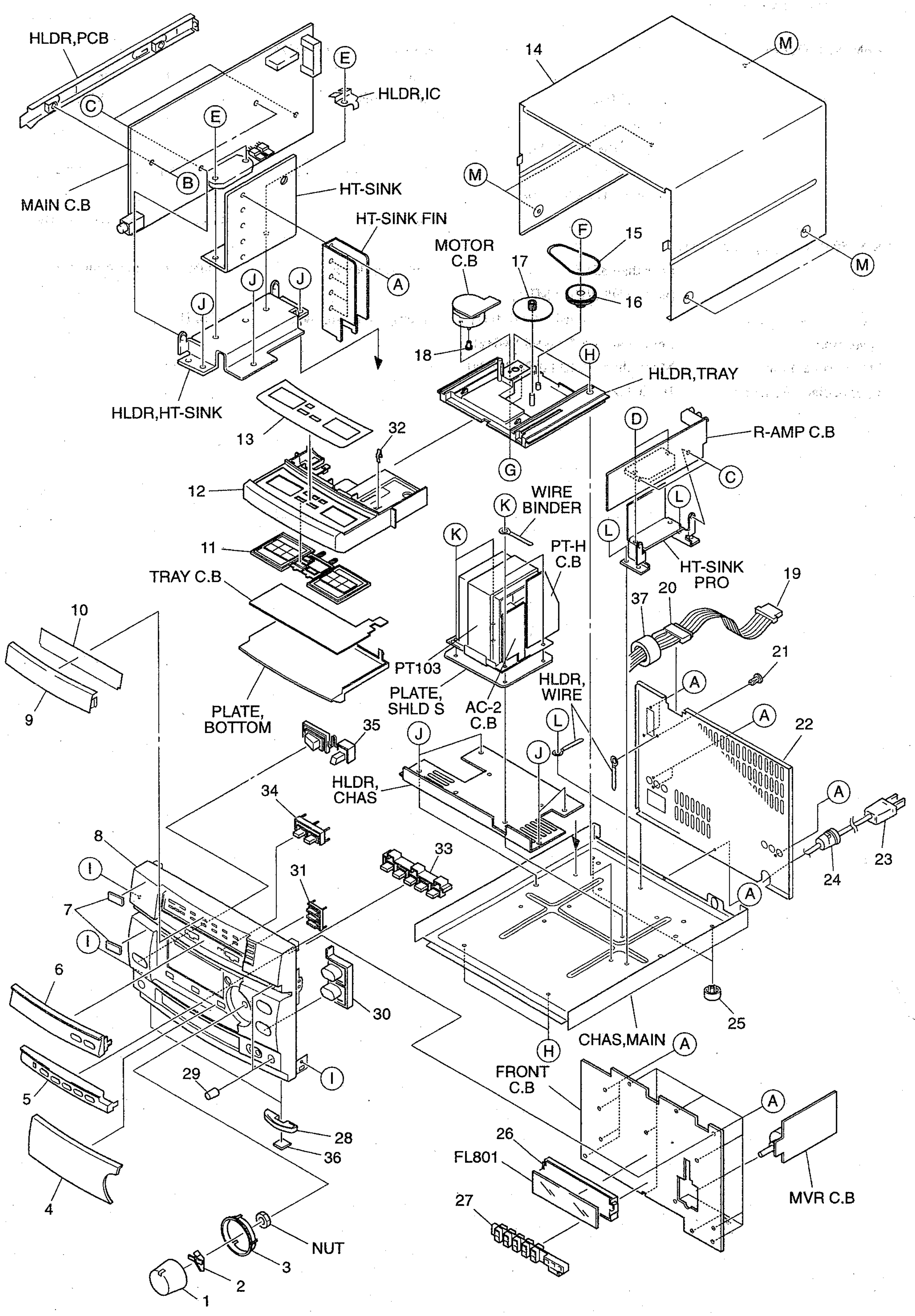
<FM SECTION>

IHF Sensitivity: (THD 3%)	Less than 10dB [at 87.5MHz] Less than 11dB [at 98.0/108.0MHz(HE)] Less than 8dB [at 98.0/108.0MHz(HR)]
S/N 50dB Quieting sensitivity:	Less than 35dB [at 87.5/98.0/108.0MHz]
Signal to noise ratio:	More than 54dB[at 98.0MHz]
Distortion:	Less than 1.5% [at 980.MHz]
Stereo separation:	More than 25dB [at 98.0MHz]
Intermediate frequency:	10.7MHz

<AM(MW) SECTION>

Sensitivity: (S/N 20dB)	48 ~ 62dB [at 603kHz] 47 ~ 59dB [at 999kHz] 47 ~ 59dB [at 1404kHz]
Signal to noise ratio:	More than 36dB[at 999kHz]
Distortion:	Less than 1.5% [at 999kHz]
Auto stop level:	50dB ± 10dB[at 999kHz]
Intermediate frequency:	450kHz

MECHANICAL EXPLODED VIEW 1 ／ 1


HLDR,PCB
MAIN C.B
HLDR,IC
HT-SINK
HT-SINK FIN
HLDR,HT-SINK
MOTOR C.B
HLDR,TRAY
R-AMP C.B
WIRE BINDER
PT-H C.B
HT-SINK PRO
TRAY C.B
PT103
PLATE, SHLD S
AC-2 C.B
HLDR, WIRE
PLATE, BOTTOM
HLDR, CHAS
CHAS,MAIN
FRONT C.B
FL801
MVR C.B
NUT
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MECHANICAL PARTS LIST 1 ／ 1

DESCRIPTION で判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	86-NT1-021-019		KNOB,RTRY VOL
2	86-NT1-022-019		REFLECTOR,VOL
3	86-NT1-026-019		RING,VOL
4	86-NT1-028-019		WINDOW,DISPLAY
5	86-NT1-006-019		PANEL,FUN
6	86-NT1-005-019		PANEL,GEQ
7	82-NE8-032-019		BADGE AIWA 27.5
8	86-NTM-001-110		CABI,FR
9	86-NT1-027-019		WINDOW,GEQ
10	86-NTM-003-010		PLATE,PRO
11	86-NT1-013-019		KEY,GEQ
12	86-NT1-004-019		TRAY,CONTROL
13	86-NTM-004-010		PLATE,TRAY 21
14	86-NT1-003-019		CABI,STEEL
15	80-VW1-217-010		BELT,SQ 1.5
16	82-NT1-205-11K		PULLEY,LOADING (*)
17	82-NT1-204-01K		GEAR,LOADING
18	80-VW1-204-010		PULLEY,MOTOR
19	86-NT2-655-010		CORD,FG15P
20	89-VT5-202-010		BUSHING,CORD
21	87-084-077-019		NYLON RIVET DIA3.5-4.5
22	86-NTM-011-010		PANEL,REAR HEJBNM<HE>
22	86-NTM-017-010		PANEL,REAR HRJBNM<HR>
⚠ 23	87-050-079-019		AC-CORD ASSY,E
24	87-085-185-019		BUSHING,AC CORD E
25	87-085-213-019		FOOT, H12.5
26	86-NT1-203-019		GUIDE,FL
27	86-NT1-202-019		GUIDE,LED
28	85-NC1-019-019		RING,FOOT
29	86-NT1-023-019		KNOB,RTRY MIC
30	86-NT1-009-019		KEY,UP/DOWN
31	86-NT1-011-019		KEY,RDS
32	81-MT3-211-019		LEVER,OPEN
33	86-NT1-020-019		KEY,ASSY FUN
34	86-NT1-010-010		KEY,PRO
35	86-NT1-008-019		KEY,POWER
36	80-VT1-202-010		FELT,12.5-15.5-2
37	87-003-317-010		F-BEAD,15-25-15 E2515MRT
A	87-067-703-019		BVT2+3-10 (W/0 SLOT)
B	87-078-084-019		BVTT+3-6 W,CONVEX
C	87-067-633-019		BVT2+3-8 W/CONVEX
D	87-067-581-019		BVT2+3-15 W/O SLOT
E	87-067-822-019		BVT2+3-20 W/O SLOT
F	87-861-095-419		VFT2+3-8 SLOT
G	87-261-073-419		V+2.6-6
H	87-067-584-019		BVT2+3-6 W/O SLOT
I	87-591-094-419		QIT + 3 - 6 GOLD
J	87-571-092-419		VIT+3-4
K	87-067-975-010		S-SCREW,IT+4-8 SWCH12A
L	87-067-688-019		BVTT +3-6
M	87-067-641-019		UTT2+3-8 W/O SLOT BLK

■ ACCESSORIES／PACKAGE LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	86-NTM-901-019		IB,H(ECA)
2	85-NT3-661-019		RC-T506
3	87-006-225-019		AM LOOP ANT NC2
4	87-043-115-019		ANT,FEEDER FM
5	87-099-789-019		PLUG,ADPTR IR44

MODEL NO.

SX-NAVH9

SPEAKER PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	86-NSM-001-010		PANEL FR
2	86-NSM-004-010		GRILLE FRAME ASSY
3	86-NS2-602-010		SPKR W 140
4	86-MS2-603-110		SPKR TW 60
5	86-NSM-610-010		TERMINAL ASSY
6	83-096-614-010		SPKR CORD

MODEL NO.

SX-R230

SPEAKER PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	85-NSX-001-010		PANEL FR
2	85-NSX-005-010		GRILLE FRAME ASSY
3	85-NSX-601-010		SPKR
4	81-VSA-010-010		SPKR CORD

MODEL NO.

SX-C400

SPEAKER PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	85-NSY-001-010		PANEL FR
2	85-NSY-010-010		GRILLE FRAME ASSY
3	85-NSY-602-010		SPKR
4	83-NSM-010-010		SPKR CORD

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

サービス技術ニュース	
番号	連絡内容
G－　　－	
G－　　－	
G－　　－	

920074, 750038

アイワ株式会社
AIWA CO.,LTD.

Tokyo Japan

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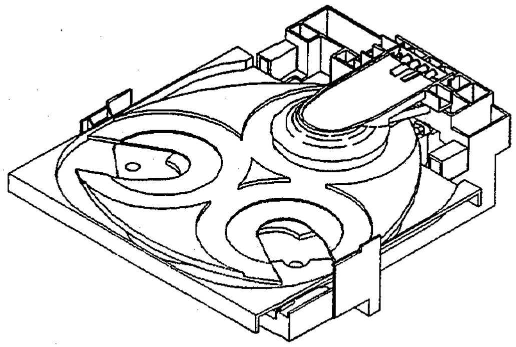
aiwa

VIDE-V16442

aiwa SERVICE

4ZG-1
4ZG-1A
4ZG-1B
4ZG-1Z

SERVICE MANUAL



CD MECHANISM

• BASIC CD MECHANISM: KSM-2 131 BAM
3ZG-2 C1 / 3ZG-2 C2 / 3ZG-2 C5

•TYPE: English

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	–	–	–	–	WR	–	–	–
	*2	G	D	F	R	–	V3L	V4L	V5
4ZG-1A		G	D	–	–	–	–	–	–
4ZG-1B		G	D	–	–	–	–	–	–
4ZG-1Z		–	D	–	–	–	–	–	–

- *1,*2, have the same BASIC NAME but the board structures are different. The CD BLOCK,VCD BLOCK of the WR are shown on the SERVICE MANUAL of each DERIVATION NAME .
- This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.
- For different version of mechanism that may be introduced since the issue of this manual, only the new or modified points be discussed.

S/M Code No. 09-965-128-10T

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4ZG-1 <A>

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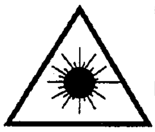
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid expo-sure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainit-ulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radi-ation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1 AGD

SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1 (ORIGINAL MODEL)
4ZG-1A (SONY IC MODEL)
4ZG-1B (TOSHIBA IC MODEL)
4ZG-1Z (SANYO IC MODEL)

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	—	—	—	—	WR	—	—	—
	*2	G	D	F	R	—	V3L	V4L	V5
4ZG-1A		G	D	—	—	—	—	—	—
4ZG-1B		G	D	—	—	—	—	—	—
4ZG-1Z		—	D	—	—	—	—	—	—

NOTE:
- *1 and *2 have the same BASIC NAME but the board structures are different.
- The CD BLOCK, VCD BLOCK of the WR is shown on the SERVICE MANUAL of each DERIVATION NAME.
- Model 4ZG-1 A, B and Z has "F" as the standard installation.

BOARD NAME / BASIC NAME		3CD C.B	LED C.B	T-T C.B	MOTOR C.B	MAIN VCD C.B	CD MECHA C.B	VCD C.B	DRIVE C.B
4ZG-1	*1	—	—	○	—	—	—	—	○
4ZG-1	*2	—	○	○	—	○	○	○ (EXCEPT V5)	—
4ZG-1A		○	○	○	○	—	—	—	—
4ZG-1B		○	○	○	○	—	—	—	—
4ZG-1Z		○	○	○	—	—	—	—	○

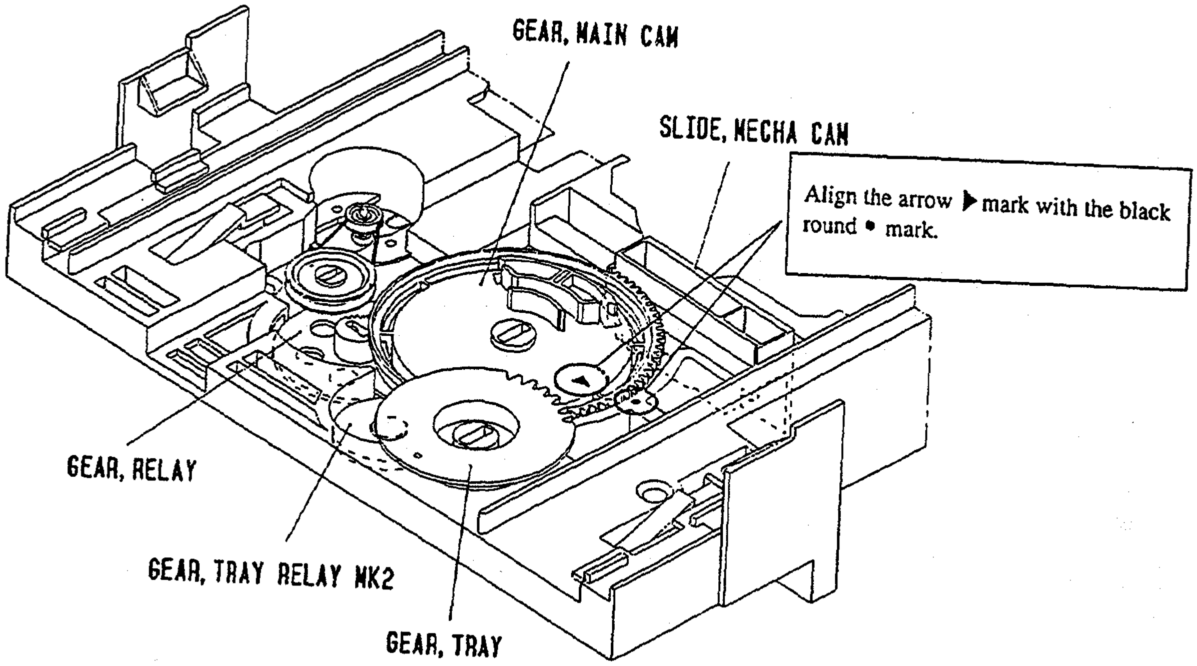
DERIVATION NAME

G:	Supporting the CD graphic feature
D:	Digital output function
F:	CD WINDOW Flash function (LED: AMBER/GREEN)
R:	Round Tray
WR:	With out Video CD and CD graphic board.
V3L:	Supporting the video CD function PAL
V4L:	Supporting the video CD function PAL
V5:	Supporting the video CD function

How to Adjust the Rotating Phase of the Gear, Main Cam

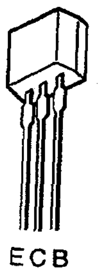
1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.

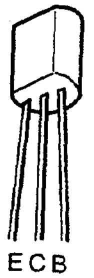

GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

Align the arrow ▶ mark with the black round • mark.

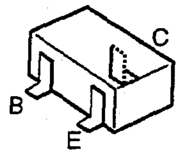
TRANSISTOR ILLUSTRATION



2SA933

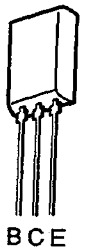


2SA1296
2SA1318
2SC1815
2SC2001
2SD655
2SD2172

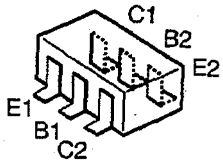


2SA1037
2SA1162
2SA1362
2SA1576
2SC2712
2SC3326
2SC4081
2SD1383

DTA123JK
DTA144TK
DTC114TK
DTC123JK
DTC124XK
DTC143TK
RN1441



2SD2005


C1
B2
E2
E1
B1
C2

HN1C03

4ZG-1

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	SC-L48-000-000		IC,CL480<V3L>
	S4-730-42X-010		IC,HD6473042F16(5EULF6)<V4L>
	SC-XD1-178-Q00		IC,CXD1178Q<V3L>
	SA-T27-C51-2R1		IC,AT27C512R-15JC<V3L>
	SX-D11-86X-010		IC,CXD1186CR(5EUNFC)<V4L>
	SC-008-K81-R10		IC,BR6265AF-10LL(5EUMFS)<V4L>
	ST-C51-425-6BJ		IC,TC514256BJ-70<V3L>
	SC-032-K81-MA0		IC,M5M5256CFP-70LL(5EUMFS)<V4L>
	87-001-948-080		IC,PST572CMT(5EUBFP)<V4L>
	SD-493-07X-010		IC,HD49307(5EUNFH)<V4L>
	SM-C68-MC7-05C		IC,MC68HC705C8ACP<V3L>
	87-002-259-080		IC,uPD6376GS<V3L>
	87-001-607-080		IC,BA4558F<V3L>
	82-NV1-628-080		IC,CXA1645M(5EUBFC)<V3L,V4L>
	SP-D63-210-010		IC,UPD63210GT-E1(5EUNFU)<V4L>
	SS-N74-HCU-04D		IC,SN74HCU04DR<V3L>
	S1-010-XXX-010		IC,UPD61010AGD-LBD(5EULF6)<V4L>
	SC-170-CXX-010		IC,TC170C100AF-001(5EUKFT)<V4L>
	SC-256-KG1-T10		IC,TC514260BJ-70(5EULMD)<V4L>
	SC-000-002-000		IC,TC514260BJ-70(5EULMD)<V4L>
	SL-C29-32X-010		IC,TLC2932IPW(5EUNFT)<V4L>
	87-017-745-019		IC,CXA1782BQ<EXCEPT V5,WR>
	87-002-783-110		IC,CXD2500BQ<EXCEPT WR>
	87-A20-257-049		IC,BA6791FP<V5>
	87-070-120-049		IC,BA6897 FP<EXCEPT V5,WR>
	87-070-429-019		IC,NJM2244L<EXCEPT V5,WR>
	87-002-532-019		IC,PQ05RF11<V5>
	87-017-825-019		IC,GP1F32T<D,V5>
	87-001-873-019		IC,LB1644<V5>
	84-ZG1-639-010		C-IC,MB89627<V5>
	ST-C74-HC2-570		IC,TC74HC257<V3L>
	83-NFT-618-010		IC,UPD78044BGF<V3L>
	85-MAR-614-010		IC,UPD78044BGF-025<V4L>
	87-070-430-019		IC,LA6530<EXCEPT V5,WR>
	87-017-543-089		IC,PST 600D<V5>
	87-A20-255-049		C-IC,SN74LV373NS<V5>
	87-A20-251-049		C-IC,BR6265BF-N10SL<V5>
	87-A20-252-049		C-IC,SN74LV00NS<V5>
	87-A20-253-049		C-IC,SN74LV04NS<V5>
	87-A20-254-049		C-IC,SN74LV32NS<V5>
	87-A20-244-010		C-IC,CL484<V5>
	87-020-881-089		IC,NJM78L05A<EXCEPT V5,WR>
	87-A20-200-040		C-IC,HM514260CJ7/CLJ7<V5>
	87-017-888-089		IC,NJM4558MD<V4L>
	84-ZG1-640-049		C-IC,LH5317<V5>
	87-A20-256-049		C-IC,PQ20VZ5U<V5>
	87-A20-247-019		C-IC,BU1417AK<V5>
	87-017-802-010		IC,LC7872E<G>
	87-A20-248-049		C-IC,BU2173F<V5>
	87-017-803-010		IC,LC32464P-80<G>
	87-A20-258-040		C-IC,SM5877AM<V5>
TRANSISTOR			
	SC-408-1XX-010		TR,2SC4081(5EQQ2S)<V4L>
	S1-441-XXX-010		TR,RN1441-A(5EQQRN)<V4L>
	SA-157-6XX-010		TR,2SA1576(5EQQ2S)<V4L>
	89-111-625-089		C-TR,2SA1162GR<EXCEPT V5,WR>
	87-026-237-089		C-TR,DTC124XK<EXCEPT WR>
	87-327-125-089		C-TR,2SC2712 GR<V5>
	89-113-625-089		C-TR 2SA 1362 GR(TAPG)<V5>
	89-327-125-089		C-TR,2SC2712GR<EXCEPT WR>
	89-112-965-089		TR,2SA1296GR<EXCEPT WR>
	87-026-608-089		C-TR,DTC 123 JK<F>
	89-324-585-010		TR,2SC2458<V3L>
	89-333-266-089		C-TR,2SC3326B<EXCEPT V5,WR>
	87-026-580-089		C-TR,DTA123JK<EXCEPT WR>
	87-026-470-089		TR,HN1C03 F B<V5>
	89-318-155-089		TR,2SC1815 GR<V5>
DIODE			
	S0-041-480-000		DIODE,1N4148<V3L>
	S1-305-700-283		DIODE,DA115(5EDQDD)<V4L>
	S0-240-010-000		DIODE,1N4001<V3L>
	SA-P20-2UX-010		DIODE,DAP202U(5EDQDD)<V4L>
	87-002-608-089		DIODE,DSF10TC<V4L>
	87-017-430-090		DIODE,RK14<V3L>
	87-020-465-089		DIODE,ISS133<EXCEPT V5,WR>
	SM-TZ2-7B0-000		ZENER,MTZ2.7B<V3L>
	87-020-027-089		C-DIODE 1SS184<V5>
	87-A40-180-049		C-DIODE SB07-015 C<V5>
	87-A40-196-089		C-ZENER UDZ6.2 B<V5>
MAIN VCD C.B<V3L,V4L>			
C101	87-012-140-089		C-CAP,S 470P-50 CH<EXCEPT WR>
C102	87-010-194-089		C-CAP,S 0.047-25 F
C103	87-010-178-089		C-CAP,S 1000P-50 B
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-010-384-089		CAP,E 100-25 SME
C106	87-010-196-089		C-CAP,S 0.1-25 F
C107	87-010-314-089		C-CAP,S 22P-50 CH
C108	87-010-314-089		C-CAP,S 22P-50 CH
C110	87-010-221-089		CAP,E 470-10 11L
C111	87-010-320-089		C-CAP,S 68P-50 CH
C112	87-010-196-089		C-CAP,S 0.1-25 F<V4L>
C112	87-016-463-089		C-CAP,S 0.33-16 B<V3L>
C113	87-010-260-089		CAP,E 47-25 SME
C114	87-010-498-049		CAP,E 10-16 GAS
C115	87-010-498-049		CAP,E 10-16 GAS<G>
C116	87-010-196-089		C-CAP,S 0.1-25 F
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-553-049		CAP,E 47-16 GAS<V4L>
C119	87-010-553-049		CAP,E 47-16 GAS
C120	87-010-197-089		C-CAP,S 0.01-25 B
C121	87-010-384-089		CAP,E 100-25 SME<V4L>
C122	87-010-320-089		C-CAP,S 68P-50 CH<D>
C123	87-010-401-089		CAP,E 1-50 SME
C124	87-A10-011-019		CAP,E 2200-25 SMG
C125	87-010-322-089		C-CAP,S 100P-50 CH
C126	87-010-178-089		C-CAP,S 1000P-50 B
C127	87-010-314-089		C-CAP,S 22P-50 CH<G>
C128	87-010-320-089		C-CAP,S 68P-50 CH
C129	87-010-263-089		CAP,E 100-10 SME<D>
C130	87-010-197-089		C-CAP,S 0.01-25 B<D>
C131	87-010-197-089		C-CAP,S 0.01-25 B
C132	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-154-089		C-CAP,S 10P-50 CH<V4L>
C201	87-010-382-089		CAP,E 22-25 SME
C202	87-010-197-089		C-CAP,S 0.01-25 B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C203	87-010-382-089		CAP,E 22-25 SME
C204	87-010-381-089		CAP,E 330-16 SME
C205	87-010-196-089		C-CAP,S 0.1-25 F
C206	87-010-196-089		C-CAP,S 0.1-25 F
C207	87-010-498-049		CAP,E 10-16 GAS<F>
C208	87-010-405-089		CAP,E 10-50 SME
C301	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-381-089		CAP,E 330-16 SME<V4L>
C307	87-010-553-049		CAP,E 47-16 GAS
C308	87-010-498-049		CAP,E 10-16 GAS
C309	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C310	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C311	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C312	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C313	87-010-384-089		CAP,E 100-25 SME<V4L>
C315	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C316	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C317	87-010-197-089		C-CAP,S 0.01-25 B
C318	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-405-089		CAP,E 10-50 SME<G>
C402	87-010-314-089		C-CAP,S 22P-50 CH<G>
C403	87-010-315-089		C-CAP,S 27P-50 CH<G>
C406	87-010-384-089		CAP,E 100-25 SME<G>
C407	87-010-384-089		CAP,E 100-25 SME<G>
C408	87-010-196-089		C-CAP,S 0.1-25 F<G>
C409	87-010-196-089		C-CAP,S 0.1-25 F<G>
CON6	83-NFT-628-019		CONN ASSY,8P<V3L>
EM101	87-008-474-089		F-BEAD,EMI BL02RN1
EM102	87-008-474-089		F-BEAD,EMI BL02RN1
FC1	85-NFT-612-019		FF-CABLE,30P-1.0<V4L>
FC2	88-912-131-219		FF-CABLE,12P 1.25
FC3	85-MAR-617-019		FF-CABLE,6P-1.25
J101	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-003-149-089		COIL,47UH
L102	87-003-149-089		COIL,47UH
L103	87-003-143-089		COIL,4.7UH
L401	87-003-149-089		COIL,47UH<G>
L402	87-003-149-089		COIL,47UH<G>
M401	87-045-305-019		MOTOR, RF-500TB
PR101	87-026-689-089		PROTECTOR,1A 60V 491
SW201	87-036-109-019		SW,PUSH SPPB 61
SW202	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-270-089		VIB,XTAL 16.9344MHZ
X201	89-MX1-704-089		CERA LOCK(MU)3.9MHZ
X401	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>

MAIN VCD C.B<V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-197-089		C-CAP,S 0.01-25 B
C102	87-010-550-049		CAP,E 100-6.3 GAS
C103	87-010-318-089		C-CAP,S 47P-50 CH
C104	87-010-197-089		C-CAP,S 0.01-25 B
C105	87-010-318-089		C-CAP,S 47P-50 CH
C106	87-010-549-049		CAP,E 47-6.3 GAS
C107	87-012-156-089		C-CAP,S 220P-50 CH
C108	87-010-184-089		C-CAP,S 3300P-50 B
C109	87-010-194-089		C-CAP,S 0.047-25 F
C110	87-012-140-089		C-CAP,S 470P-50 CH
C111	87-010-197-089		C-CAP,S 0.01-25 B
C112	87-016-461-089		C-CAP,S 0.47-16 F
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-550-049		CAP,E 100-6.3 GAS
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-561-049		CAP,E 100-16 GAS
C117	87-010-562-049		CAP,E 220-10 GAS
C118	87-010-553-049		CAP,E 47-16 GAS
C119	87-010-197-089		C-CAP,S 0.01-25 B
C120	87-010-555-089		CAP,E 100-10 GAS
C121	87-010-197-089		C-CAP,S 0.01-25 B
C201	87-010-499-049		CAP,E 22-6.3 GAS
C202	87-010-197-089		C-CAP,S 0.01-25 B
C203	87-010-196-089		C-CAP,S 0.1-25 F
C204	87-010-316-089		C-CAP,S 33P-50 CH
C205	87-010-316-089		C-CAP,S 33P-50 CH
C206	87-010-499-049		CAP,E 22-6.3 GAS
C207	87-010-197-089		C-CAP,S 0.01-25 B
C208	87-010-197-089		C-CAP,S 0.01-25 B
C209	87-010-197-089		C-CAP,S 0.01-25 B
C210	87-010-197-089		C-CAP,S 0.01-25 B
C211	87-010-197-089		C-CAP,S 0.01-25 B
C212	87-010-318-089		C-CAP,S 47P-50 CH
C301	87-010-549-049		CAP,E 47-6.3 GAS
C302	87-010-549-049		CAP,E 47-6.3 GAS
C304	87-010-197-089		C-CAP,S 0.01-25 B
C305	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-197-089		C-CAP,S 0.01-25 B
C307	87-010-197-089		C-CAP,S 0.01-25 B
C308	87-010-197-089		C-CAP,S 0.01-25 B
C309	87-010-197-089		C-CAP,S 0.01-25 B
C310	87-010-197-089		C-CAP,S 0.01-25 B
C311	87-010-197-089		C-CAP,S 0.01-25 B
C312	87-010-197-089		C-CAP,S 0.01-25 B
C313	87-010-318-089		C-CAP,S 47P-50 CH
C314	87-010-196-089		C-CAP,S 0.1-25 F
C315	87-010-196-089		C-CAP,S 0.1-25 F
C316	87-010-549-049		CAP,E 47-6.3 GAS
C317	87-010-314-089		C-CAP,S 22P-50 CH
C319	87-010-314-089		C-CAP,S 22P-50 CH
C320	87-010-196-089		C-CAP,S 0.1-25 F
C321	87-010-550-049		CAP,E 100-6.3 GAS
C322	87-010-197-089		C-CAP,S 0.01-25 B
C323	87-010-550-049		CAP,E 100-6.3 GAS
C324	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-197-089		C-CAP,S 0.01-25 B
C402	87-010-550-049		CAP,E 100-6.3 GAS
C403	87-010-197-089		C-CAP,S 0.01-25 B
C404	87-012-140-089		C-CAP,S 470P-50 CH
C405	87-010-322-089		C-CAP,S 100P-50 CH
C406	87-012-140-089		C-CAP,S 470P-50 CH
C407	87-016-350-049		CAP,E 470-4 MA GAS
C408	87-010-196-089		C-CAP,S 0.1-25 F
C409	87-010-197-089		C-CAP,S 0.01-25 B
C410	87-010-197-089		C-CAP,S 0.01-25 B
C411	87-010-550-049		CAP,E 100-6.3 GAS
C412	87-010-197-089		C-CAP,S 0.01-25 B
C413	87-010-314-089		C-CAP,S 22P-50 CH
C414	87-010-316-089		C-CAP,S 33P-50 CH
C415	87-010-499-049		CAP,E 22-6.3 GAS
C416	87-010-197-089		C-CAP,S 0.01-25 B
C418	87-010-197-089		C-CAP,S 0.01-25 B
C420	87-010-196-089		C-CAP,S 0.1-25 F
C421	87-012-140-089		C-CAP,S 470P-50 CH
C422	87-010-184-089		C-CAP,S 3300P-50 B
C422	87-010-184-089		C-CAP,S 3300P-50 B
C423	87-010-175-089		C-CAP,S 560P-50 SL
C424	87-010-317-089		C-CAP,S 39P-50 CH
C425	87-012-140-089		C-CAP,S 470P-50 CH
C501	87-010-549-049		CAP,E 47-6.3 GAS
C502	87-010-196-089		C-CAP,S 0.1-25 F
C503	87-010-318-089		C-CAP,S 47P-50 CH
C505	87-010-313-089		C-CAP,S 18P-50 CH
C506	87-010-313-089		C-CAP,S 18P-50 CH
C507	87-010-197-089		C-CAP,S 0.01-25 B
C508	87-010-178-089		C-CAP,S 1000P-50 B
C509	87-010-178-089		C-CAP,S 1000P-50 B
C510	87-010-178-089		C-CAP,S 1000P-50 B
C511	87-010-178-089		C-CAP,S 1000P-50 B
C512	87-010-498-049		CAP,E 10-16 GAS
C513	87-010-498-049		CAP,E 10-16 GAS
C514	87-010-318-089		C-CAP,S 47P-50 CH
C515	87-010-318-089		C-CAP,S 47P-50 CH
C516	87-010-196-089		C-CAP,S 0.1-25 F
C599	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-561-049		CAP,E 100-16 5L
C602	87-010-432-049		CAP,E 10-16 OS

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-A10-222-049		CAP,E 22-10 OS
C606	87-010-196-089		C-CAP,S 0.1-25 F
C607	87-012-140-089		C-CAP,S 470P-50 CH
C608	87-010-196-089		C-CAP,S 0.1-25 F
J401	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-005-781-089		C-COIL,47UH FLC32C
L201	87-005-781-089		C-COIL,47UH FLC32C
L202	87-005-781-089		C-COIL,47UH FLC32C
L301	87-005-781-089		C-COIL,47UH FLC32C
L302	87-005-781-089		C-COIL,47UH FLC32C
L303	87-005-781-089		C-COIL,47UH FLC32C
L401	87-005-196-089		COIL,10UH
L402	87-005-781-089		C-COIL,47UH FLC32C
L404	87-005-190-089		COIL,3.3UH
L405	87-005-189-089		COIL,2.7UH
L501	87-005-781-089		C-COIL,47UH FLC32C
L601	87-005-469-089		COIL,4.7UH
L602	87-A50-095-019		COIL,68UH
M201	87-045-305-019		MOTOR, RF-500TB
S101	87-036-109-019		SW,PUSH SPPB 61
S102	87-036-109-019		SW,PUSH SPPB 61
S201	87-A90-162-019		SW,SL 1-1-3 SSSU
X201	87-A70-027-089		VIB,XTAL 8MHZ 100PPM
X401	87-A70-026-089		VIB,XTAL 13.5MHZ 50PPM
X501	87-030-270-089		VIB,XTAL 16.9344MHZ

CD MECHA C.B<V3L,V4L,V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-154-089		C-CAP,S 10P-50 CH<EXCEPT V5>
C101	87-010-334-080		C-CAP,S 12P-50 CH<V5>
C102	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C102	87-010-184-089		C-CAP,S 3300P-50 B<EXCEPT V5>
C103	87-010-197-089		C-CAP,S 0.01-25 B<EXCEPT V5>
C103	87-010-993-089		C-CAP,S 0.056-25<V5>
C104	87-010-193-089		C-CAP,S 0.033-25 F<EXCEPT V5>
C104	87-010-993-089		C-CAP,S 0.056-25<V5>
C105	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-197-089		C-CAP,S 0.01-25 B<V5>
C107	87-010-182-089		C-CAP,S 2200P-50 B<EXCEPT V5>
C108	87-010-805-089		C-CAP,S 1-16F
C109	87-010-322-089		C-CAP,S 100P-50 CH
C110	87-010-198-089		C-CAP,S 0.022-25 B<EXCEPT V5>
C110	87-010-993-089		C-CAP,S 0.056-25<V5>
C111	87-010-551-089		CAP ELECT 33-10V SRE<EXCEPT V5>
C111	87-010-499-049		CAP,E 22-6.3 GAS<V5>
C112	87-010-322-089		C-CAP,S 100P-50 CH
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C115	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C116	87-010-182-089		C-CAP,S 2200P-50 B
C117	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C117	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C118	87-010-196-089		C-CAP,S 0.1-25 F
C119	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C119	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C120	87-010-549-089		CAP ELECT 47-6.3V
C121	87-010-549-089		CAP ELECT 47-6.3V
C122	87-010-495-089		CAP,E 2.2-35 5L<V5>
C122	87-010-497-089		CAP,E 4.7-35 5L<EXCEPT V5>
C123	87-010-549-089		CAP ELECT 47-6.3V
C125	87-010-553-089		CAP,E 47-16
C127	87-010-553-089		CAP,E 47-16
C127	87-010-549-089		CAP,E 47-6.3 GAS
C128	87-010-549-089		CAP ELECT 47-6.3V
C129	87-010-182-089		C-CAP,S 2200P-50 B
C131	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-197-089		C-CAP,S 0.01-25 B
C137	87-010-805-089		C-CAP,S 1-16F
C138	87-010-178-089		C-CAP,S 1000P-50 B
C140	87-010-805-089		C-CAP,S 1-16F<EXCEPT V5>
FC4	85-NFT-611-119		FF-CABLE,16P-1.0
M101	87-045-356-019		MOT,RF-310T A 30
M102	87-045-358-019		MOT,RF-310T A 43
R140	87-022-364-089		C-RES,S82K-1/10WF
R141	87-022-363-089		C-RES,S 68K-1/10W F
R142	87-022-363-089		C-RES,S 68K-1/10W F
R143	87-022-363-089		C-RES,S 68K-1/10W F
R144	87-022-363-089		C-RES,S 68K-1/10W F
R145	87-022-364-089		C-RES,S82K-1/10WF
SFR101	87-024-175-089		SFR,47K DIA6 V
SFR102	87-024-176-089		SFR,100K DIA6 V
SFR103	87-024-175-089		SFR,47K DIA6 V
SW101	87-036-340-019		SW,LEAF LSA-1121

T-T C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
FC401	84-ZG1-614-119		CABLE FFC 5P-1.25
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

LED C.B<F>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
LED101	87-070-200-089		LED,SLP636C-81-S-T1<F>
LED102	87-017-350-080		LED,SEL1550CM<F>
LED103	87-017-350-080		LED,SEL1550CM<F>
LED104	87-070-200-089		LED,SLP636C-81-S-T1<F>

VCD C.B<V3L>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C2	87-010-378-010		CAP,E 10-16
C3	87-010-378-010		CAP,E 10-16
C4	87-010-374-010		CAP,E 47-10
C5	87-010-374-010		CAP,E 47-10
C9	87-010-378-010		CAP,E 10-16
C10	87-010-378-010		CAP,E 10-16
C11	87-010-378-010		CAP,E 10-16
C12	87-010-374-010		CAP,E 47-10
C13	87-010-378-010		CAP,E 10-16
C17	87-010-248-010		CAP,E 220-10
C22	87-010-374-010		CAP,E 47-10
C23	87-010-374-010		CAP,E 47-10
C32	87-010-378-010.		CAP,E 10-16
C47	87-010-248-010		CAP,E 220-10
C49	87-010-378-010		CAP,E 10-16
C52	87-010-248-010		CAP,E 220-10
C101	87-010-378-010		CAP,E 10-16
L1	SL-AL0-4NA-100		COIL,10UH
L2	SL-AL0-4NA-472		COIL,4.7UH
X1	SS-KY4-05M-000		X'TAL,40.5MHz
X2	SS-KY4-M00-000		X'TAL,4MHz
X3	SS-KY4-433-616		X'TAL,4.433616MHz

VCD C.B<V4L>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C13	87-010-367-080		CAP,E 4.7-25V(5ECEC1)
C38	87-010-075-040		CAP,E 10-16V(5ECEC1)
C40	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C44	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C47	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C48	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C51	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C54	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C56	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C58	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C81	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C128	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C133	87-010-053-810		CAP,E 1-50V(5ECEC1)
C150	87-010-075-040		CAP,E 10-16V(5ECEC1)

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C151	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C152	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C157	87-010-075-040		CAP,E 10-16V(5ECEC1)
CT1	S2-130-007-010		CAP,TRIMMER 30PF(5ECT04)
L1	S7-001-XXX-100		C-COIL,47UH(5ELQE4)
X1	S0-120-003-010		X'TAL,12.0000MHZ(5EXMA4)
X2	S0-177-343-010		X'TAL,17.73447MHZ(5EXMA4)

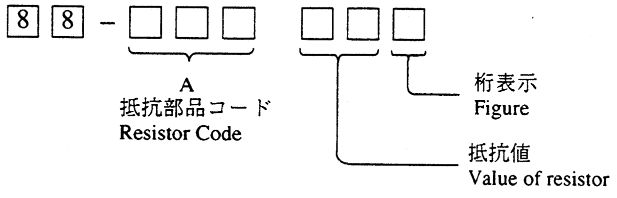
SUB C.B<V3L>

DRIVE C.B<WR>

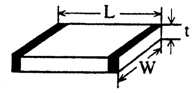
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

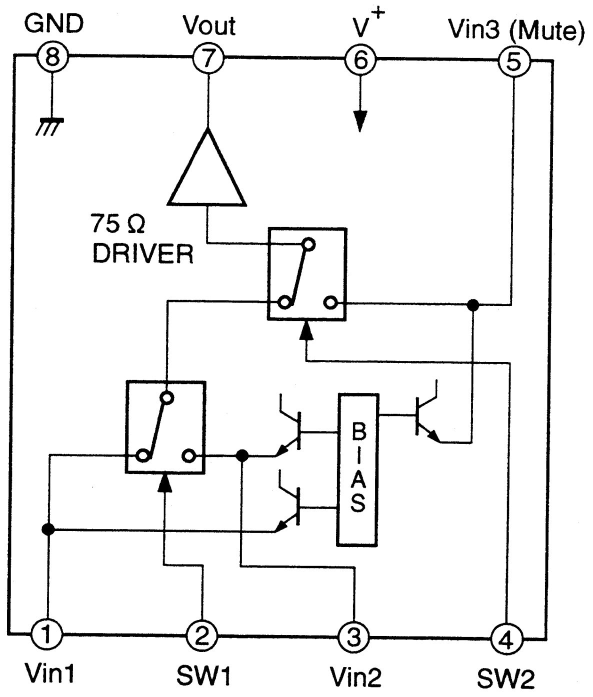

8 8 -
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

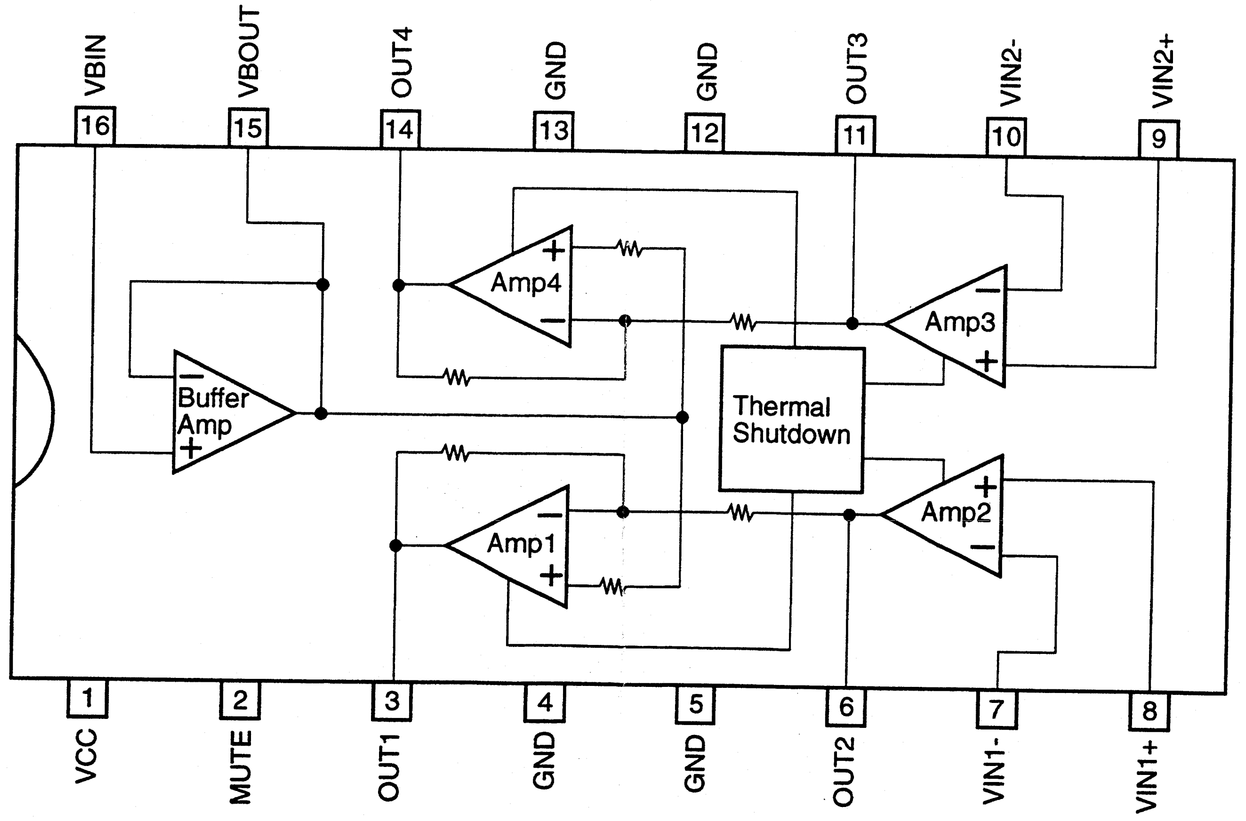
IC BLOCK DIAGRAM

IC, NJM2244L

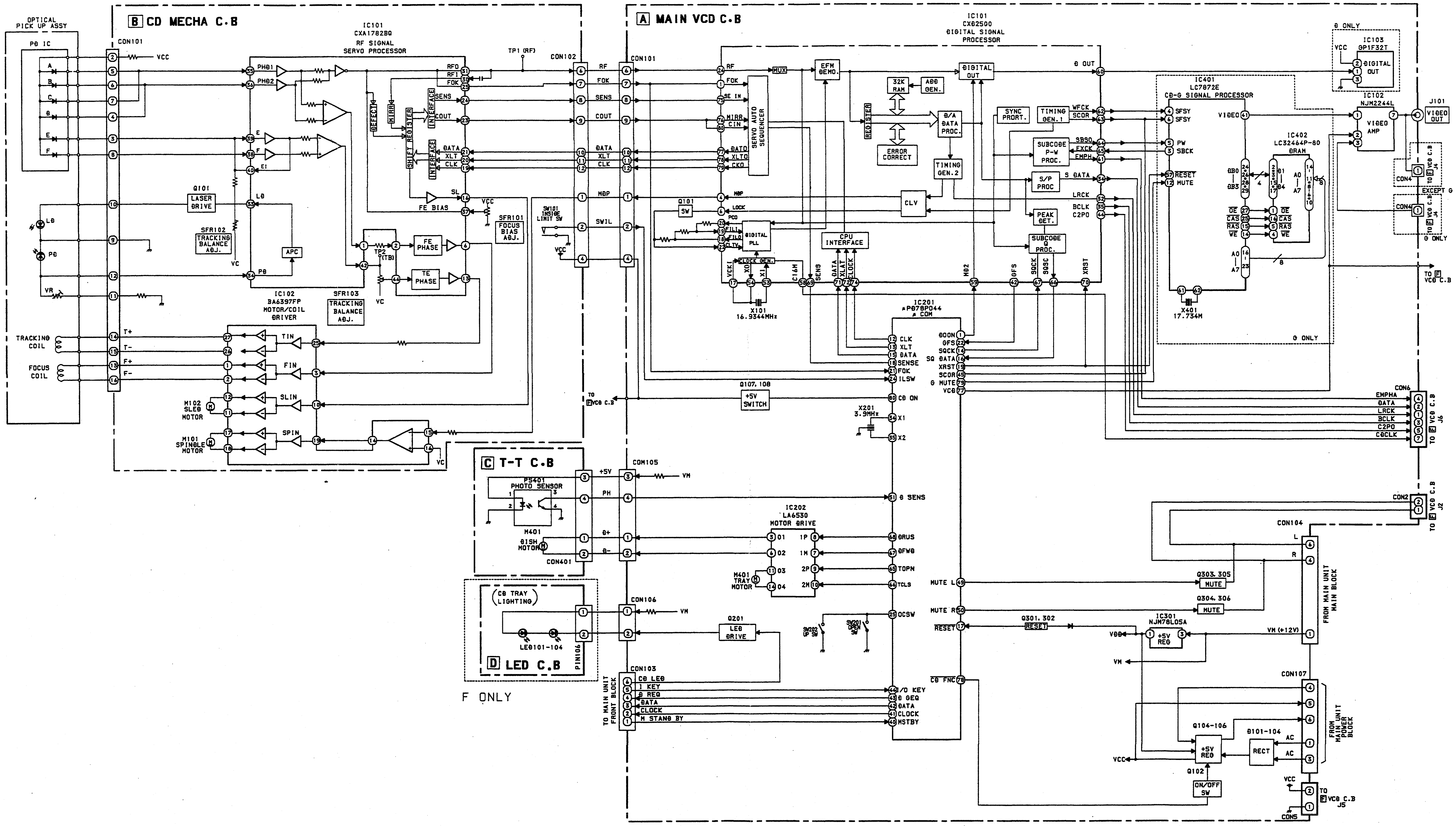

GND
Vout
V+
Vin3 (Mute)
8
7
6
5
75 Ω
DRIVER
B
I
A
S
1
2
3
4
Vin1
SW1
Vin2
SW2

SW1	SW2	OUTPUT SIGNAL
L	L	Vin1
H	L	Vin2
L/H	H	Vin3

IC, LA6530

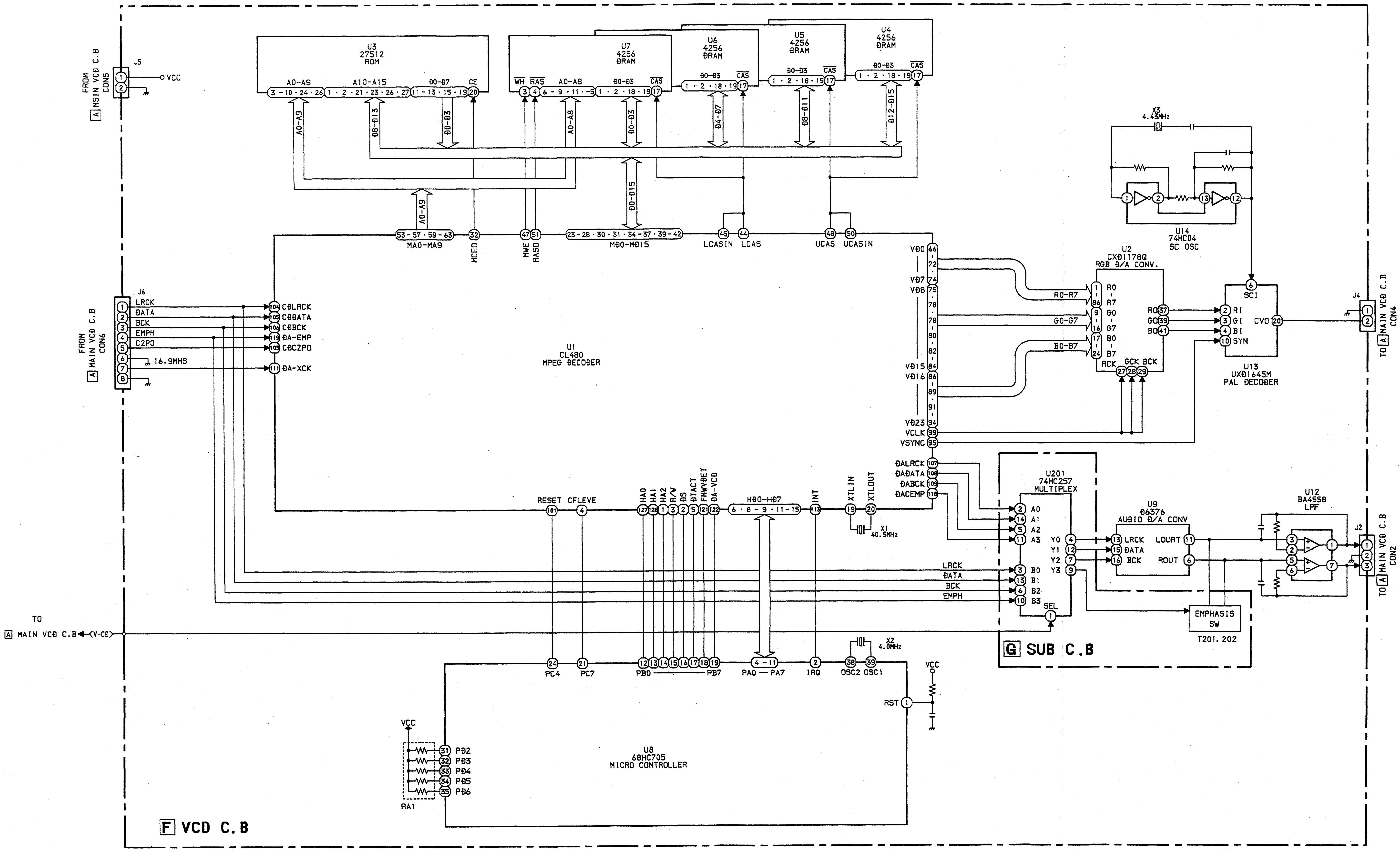

VBIN
VBOUT
OUT4
GND
GND
OUT3
VIN2-
VIN2+
16
15
14
13
12
11
10
9
Amp4
Amp3
Buffer Amp
Thermal Shutdown
Amp1
Amp2
1
2
3
4
5
6
7
8
VCC
MUTE
OUT1
GND
GND
OUT2
VIN1-
VIN1+

BLOCK DIAGRAM-1 (V3L: MAIN VCD ／ CD MECHA)



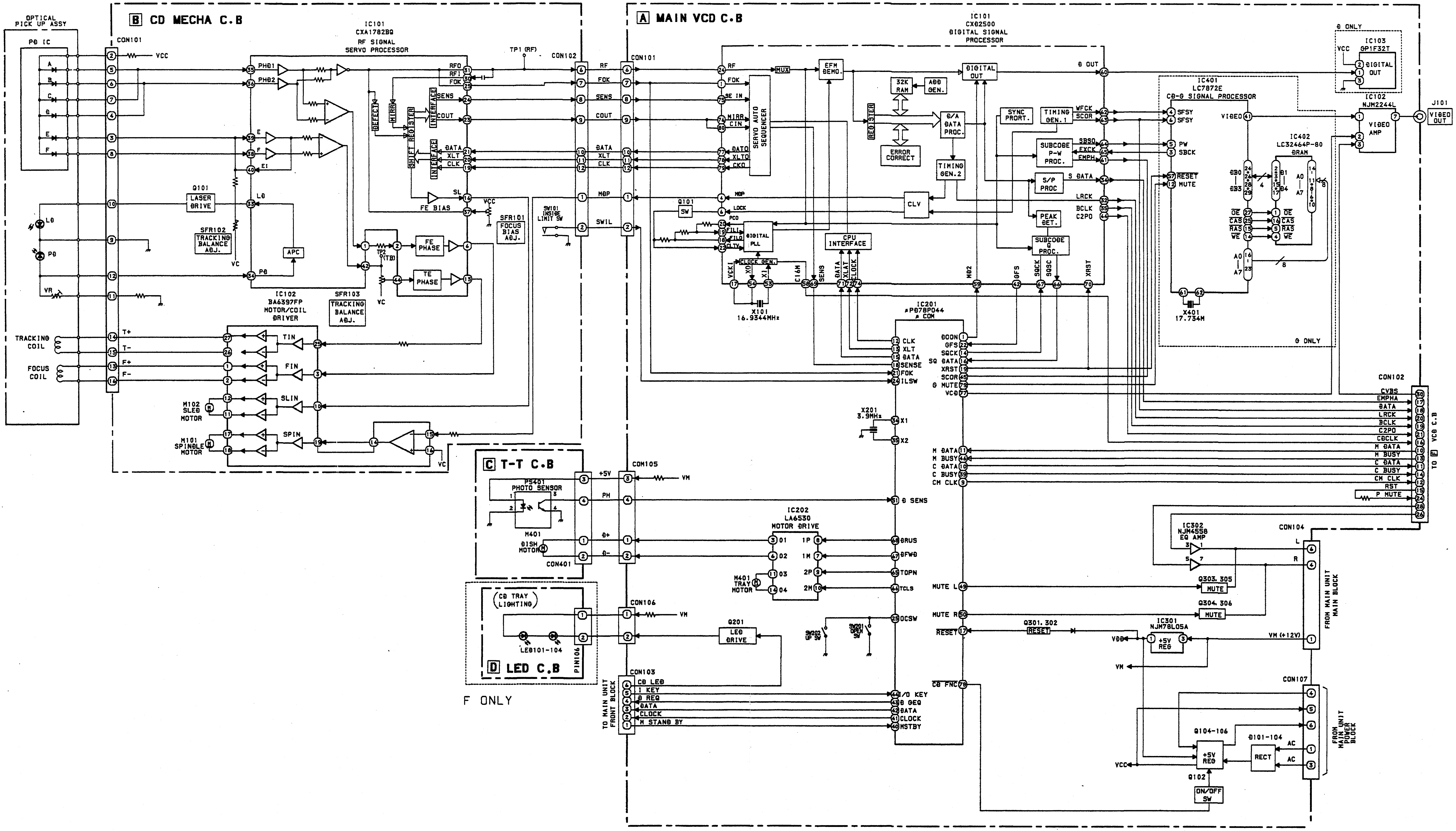
B CD MECHA C.B
OPTICAL PICK UP ASSY
PD IC
CON101
VCC
LD
PD
VR
TRACKING COIL
FOCUS COIL
M102 SLED MOTOR
M101 SPINDLE MOTOR
IC101
CXA1782BQ
RF SIGNAL SERVO PROCESSOR
PHD1
PHD2
DEFECT
MIRR
SHIFT REGISTER
INTERFACE
RFO
RFI
FOK
SENS
COUT
DATA
XLT
CLK
SL
FE BIAS
Q101 LASER DRIVE
SFR102 TRACKING BALANCE ADJ.
APC
SFR101 FOCUS BIAS ADJ.
FE PHASE
TE PHASE
TP2 (TE)
TP1 (RF)
IC102
BA6397FP
MOTOR/COIL DRIVER
SFR103 TRACKING BALANCE ADJ.
TIN
FIN
SLIN
SPIN
CON102
RF
FOK
SENS
COUT
DATA
XLT
CLK
MDP
SWIL
SW101 INSIDE LIMIT SW
TO F VCD C.B
A MAIN VCD C.B
IC101
CXD2500
DIGITAL SIGNAL PROCESSOR
MUX
EFM DEMO.
32K RAM
ADD GEN.
REGISTER
D/A DATA PROC.
ERROR CORRECT
TIMING GEN.2
DIGITAL OUT
SYNC PROTECT.
TIMING GEN.1
SUBCODE P-W PROC.
S/P PROC
PEAK DET.
SUBCODE Q PROC.
CLV
CPU INTERFACE
DIGITAL PLL
CLOCK GEN.
SERVO AUTO SEQUENCER
Q101 SW
X101 16.9344MHz
D OUT
WFCK
SCOR
SBSO
EXCK
EMPH
S DATA
LRCK
BCLK
C2PO
XRST
SQSO
SQCK
GFS
MD2
IC401
LC7872E
CD-G SIGNAL PROCESSOR
SFSY
PW
SBCK
RESET
MUTE
VIDEO
X401 17.734M
G ONLY
IC402
LC32464P-80
DRAM
IC103
GP1F32T
DIGITAL OUT
D ONLY
IC102
NJM2244L
VIDEO AMP
J101
VIDEO OUT
TO F VCD C.B J4
CON4
EXCEPT G
G ONLY
TO F VCD C.B
IC201
*P078P044
μ COM
DOON
GFS
SQCK
SQ DATA
XRST
SCOR
G MUTE
VCD
CLK
XLT
DATA
SENSE
FOK
ILSW
Q107, 108
+5V SWITCH
CD ON
X201 3.9MHz
X1
X2
CON6
EMPHA
DATA
LRCK
BCLK
C2PO
CDCLK
TO F VCD C.B J6
C T-T C.B
PS401 PHOTO SENSOR
M401 DISH MOTOR
CON401
CON105
+5V
PH
D+
D-
VM
D SENS
IC202
LA6530
MOTOR DRIVE
M401 TRAY MOTOR
DRUS
DFWD
TOPN
TCLS
OCSW
SW202 UP SW
SW201 OPEN SW
D LED C.B
CD TRAY LIGHTING
LED101-104
PIN106
CON106
Q201 LED DRIVE
F ONLY
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
I/O KEY
D GEQ
DATA
CLOCK
MSTBY
MUTE L
MUTE R
RESET
CD FNC
CON2
TO F VCD C.B J2
CON104
L
R
FROM MAIN UNIT MAIN BLOCK
Q303, 305 MUTE
Q304, 306 MUTE
Q301, 302 RESET
IC301 NJM78L05A
+5V REG
VDD
VM (+12V)
VM
CON107
FROM MAIN UNIT POWER BLOCK
Q104-106
+5V REG
D101-104
RECT
AC
VCC
Q102
ON/OFF SW
CON5
TO F VCD C.B J5

BLOCK DIAGRAM-2 (V3L: VCD)

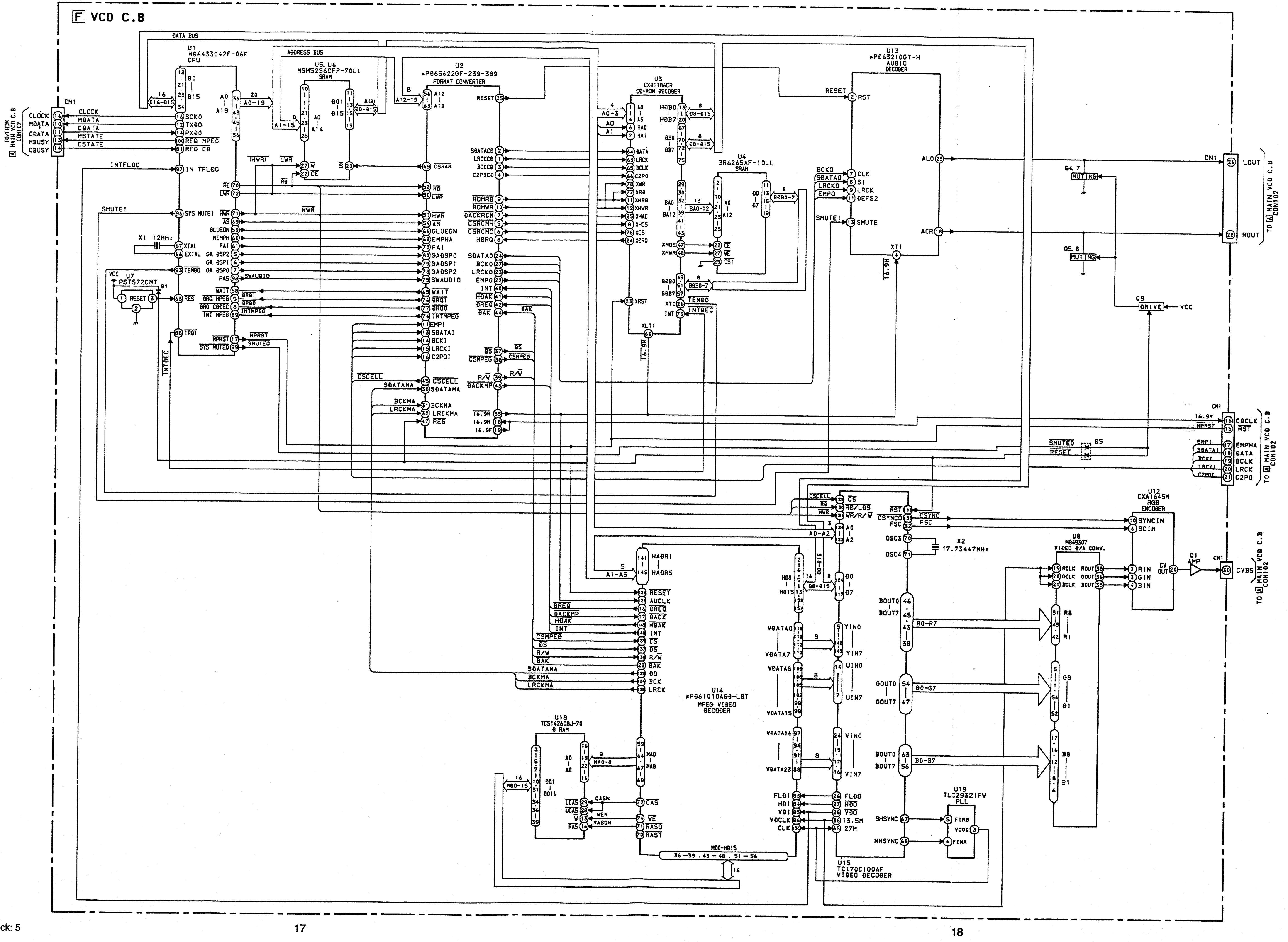


FROM A MSIN VCD C.B CON5
J5
VCC
U3 27512 ROM
A0-A9
A10-A15
D0-D7
CE
U7 4256 DRAM
WH
RAS
A0-A8
D0-D3
CAS
U6 4256 DRAM
U5 4256 DRAM
U4 4256 DRAM
D4-D7
D8-D11
D12-D15
D8-D13
D0-D15
MA0-MA9
MCED
MWE
RASO
MD0-MD15
LCASIN
LCAS
UCAS
UCASIN
FROM A MAIN VCD C.B CON6
J6
LRCK
DATA
BCK
EMPH
C2PO
16.9MHS
CDLRCK
CDDATA
CDBCK
DA-EMP
CDCZPO
DA-XCK
U1 CL480 MPEG DECODER
VD0
VD7
VD8
VD15
VD16
VD23
VCLK
VSYNC
DALRCK
DADATA
DABCK
DACEMP
X3 4.43MHz
U14 74HC04 SC OSC
U2 CXD1178Q RGB D/A CONV.
R0-R7
G0-G7
B0-B7
RCK
GCK
BCK
SCI
RI
GI
BI
SYN
CVO
U13 UXD1645M PAL DECODER
J4
TO A MAIN VCD C.B CON4
RESET
CFLEVE
HA0
HA1
HA2
R/W
DS
DTACT
FMWVDET
DA-VCD
HD0-HD7
INT
XTLIN
XTLOUT
X1 40.5MHz
U201 74HC257 MULTIPLEX
A0
A1
A2
A3
B0
B1
B2
B3
Y0
Y1
Y2
Y3
SEL
U9 D6376 AUDIO D/A CONV
LOURT
ROUT
U12 BA4558 LPF
J2
TO A MAIN VCD C.B CON2
EMPHASIS SW
T201, 202
G SUB C.B
TO A MAIN VCD C.B
V-CD
X2 4.0MHz
PC4
PC7
PB0
PB7
PA0 — PA7
IRQ
OSC2
OSC1
RST
VCC
U8 68HC705 MICRO CONTROLLER
PD2
PD3
PD4
PD5
PD6
RA1
F VCD C.B

BLOCK DIAGRAM-3 (V4L: MAIN VCD ／ CD MECHA)

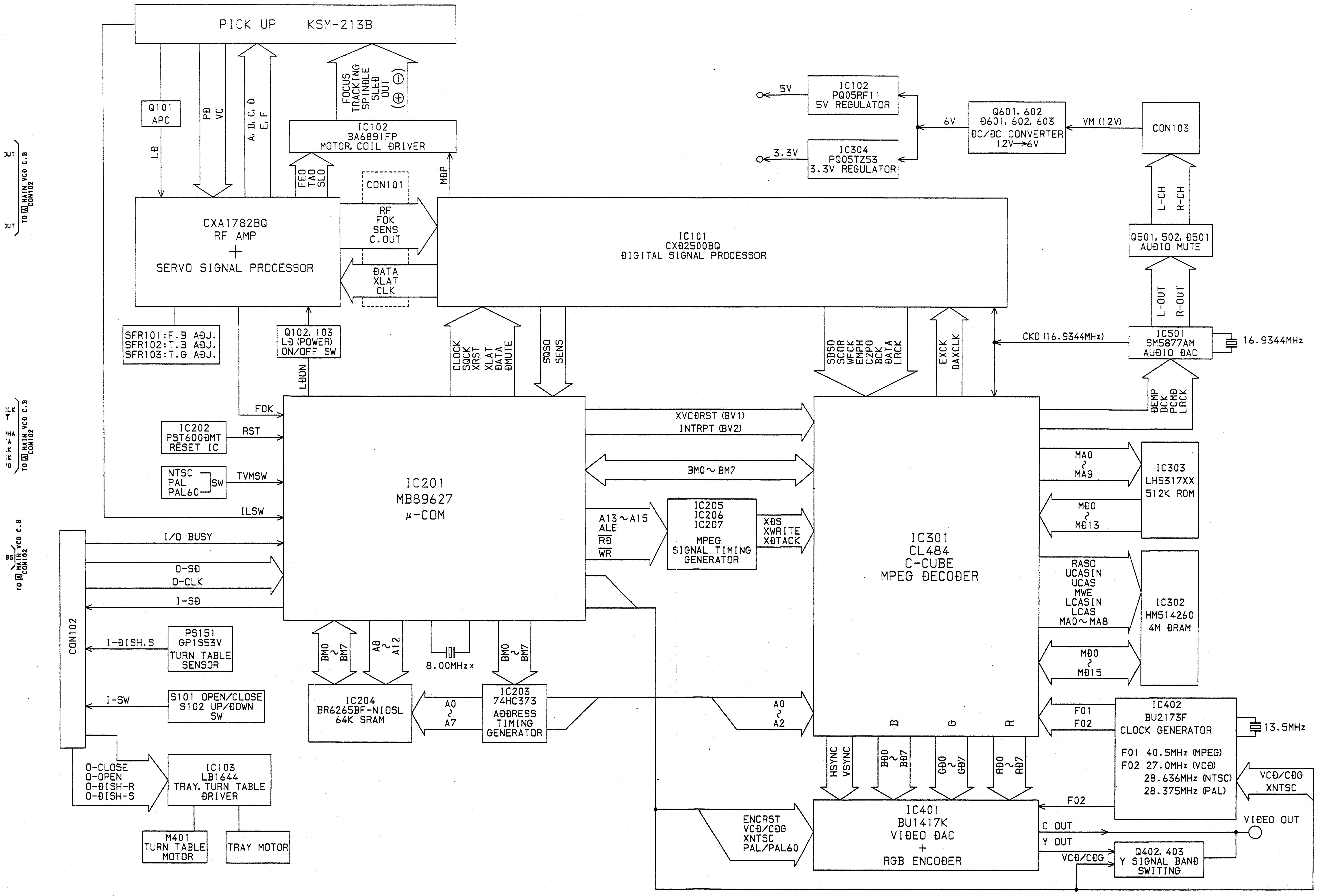

OPTICAL PICK UP ASSY
PD IC
B CD MECHA C.B
CON101
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
TP1 (RF)
CON102
Q101 LASER DRIVE
SFR102 TRACKING BALANCE ADJ.
APC
SFR101 FOCUS BIAS ADJ.
FE PHASE
TE PHASE
FE BIAS
SHIFT REGISTER
INTERFACE
DEFECT
MIRR
IC102 BA6397FP MOTOR/COIL DRIVER
SFR103 TRACKING BALANCE ADJ.
TRACKING COIL
FOCUS COIL
M102 SLED MOTOR
M101 SPINDLE MOTOR
TIN
FIN
SLIN
SPIN
SW101 INSIDE LIMIT SW
RF
FOK
SENS
COUT
DATA
XLT
CLK
MDP
SWIL
A MAIN VCD C.B
IC101 CXD2500 DIGITAL SIGNAL PROCESSOR
MUX
EFM DEMO.
32K RAM
ADD GEN.
REGISTER
D/A DATA PROC.
ERROR CORRECT
TIMING GEN.2
SERVO AUTO SEQUENCER
DIGITAL OUT
SYNC PROTECT.
TIMING GEN.1
SUBCODE P-W PROC.
S/P PROC
PEAK DET.
SUBCODE Q PROC.
CLV
CPU INTERFACE
DIGITAL PLL
CLOCK GEN.
X101 16.9344MHz
IC201 μPD78P044 μ-COM
X201 3.9MHz
IC401 LC7872E CD-G SIGNAL PROCESSOR
X401 17.734M
IC402 LC32464P-80 DRAM
IC103 GP1F32T DIGITAL OUT
D ONLY
IC102 NJM2244L VIDEO AMP
J101 VIDEO OUT
CON102
TO E VCD C.B
C T-T C.B
PS401 PHOTO SENSOR
M401 DISH MOTOR
CON401
CON105
IC202 LA6530 MOTOR DRIVE
M401 TRAY MOTOR
CD TRAY LIGHTING
LED101-104
D LED C.B
PIN106
F ONLY
CON106
Q201 LED DRIVE
SW202 UP SW
SW201 OPEN SW
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
IC302 NJM4558 EQ AMP
CON104
FROM MAIN UNIT MAIN BLOCK
Q303, 305 MUTE
Q304, 306 MUTE
Q301, 302 RESET
IC301 NJM78L05A +5V REG
VM (+12V)
CON107
FROM MAIN UNIT POWER BLOCK
Q104-106 +5V REG
D101-104 RECT
Q102 ON/OFF SW

BLOCK DIAGRAM-4 (V4L: VCD)

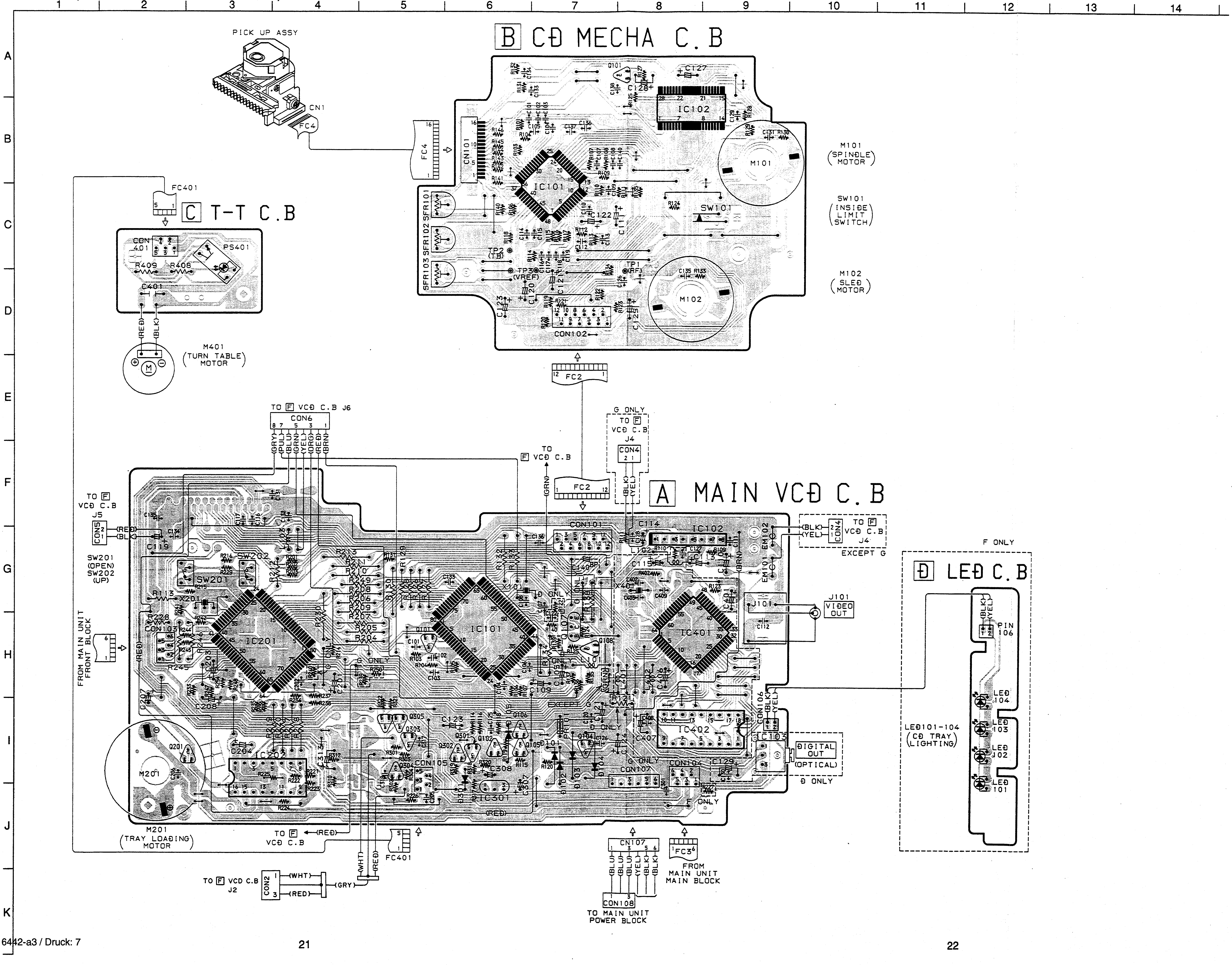


F VCD C.B
DATA BUS
ADDRESS BUS
U1 HD6433042F-06F CPU
U5, U6 MSM5256CFP-70LL SRAM
U2 µPD65622GF-239-389 FORMAT CONVERTER
U3 CXD1186CR CD-ROM DECODER
U4 BR6265AF-10LL SRAM
U13 µPD63210GT-H AUDIO DECODER
U7 PST572CMT
X1 12MHz
CN1
TO/FROM A MAIN VCD C.B CON102
CLOCK
MDATA
CDATA
MSTATE
MBUSY
CSTATE
CBUSY
INTFLOD
SMUTE1
INTDEC
VCC
RESET
Q4, 7 MUTING
Q5, 8 MUTING
Q9 DRIVE
D5
LOUT
ROUT
TO A MAIN VCD C.B CON102
16.9M
MPRST
SMUTED
EMPI
SDATAI
BCKI
LRCKI
C2POI
DCLK
RST
EMPHA
DATA
BCLK
LRCK
C2PO
U12 CXA1645M RGB ENCODER
U8 HD49307 VIDEO D/A CONV.
Q1 AMP
CVBS
X2 17.73447MHz
U14 µPD61010AGD-LBT MPEG VIDEO DECODER
U18 TC5142608J-70 D RAM
U15 TC170C100AF VIDEO DECODER
U19 TLC2932IPW PLL
MD0-MD15
36-39 . 43-48 . 51-56
16.9M

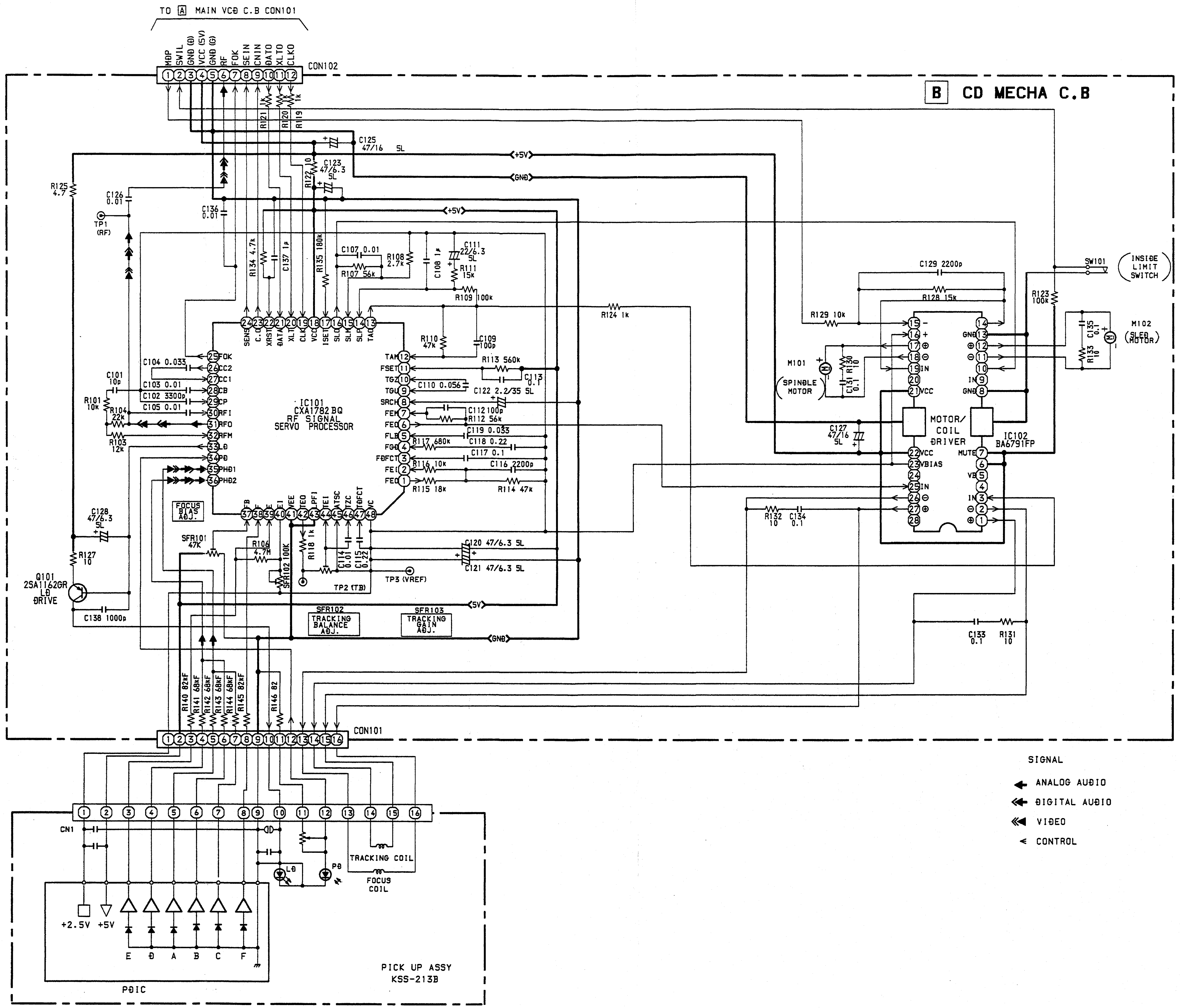
BLOCK DIAGRAM-5 (V5)


PICK UP KSM-213B
Q101 APC
LD
PD
VC
A, B, C, D
E, F
FOCUS
TRACKING
SPINDLE
SLED
OUT
(⊕ ⊖)
IC102 BA6891FP MOTOR, COIL DRIVER
FEO
TAO
SLO
CON101
MDP
CXA1782BQ RF AMP + SERVO SIGNAL PROCESSOR
RF
FOK
SENS
C.OUT
DATA
XLAT
CLK
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
SFR101:F.B ADJ.
SFR102:T.B ADJ.
SFR103:T.G ADJ.
Q102, 103 LD (POWER) ON/OFF SW
LDON
CLOCK
SQCK
XRST
XLAT
DATA
DMUTE
SQSO
SENS
SBSO
SCOR
WFCK
EMPH
C2PO
BCK
DATA
LRCK
EXCK
DAXCLK
5V
IC102 PQ05RF11 5V REGULATOR
3.3V
IC304 PQ05TZ53 3.3V REGULATOR
6V
Q601, 602 D601, 602, 603 DC/DC CONVERTER 12V→6V
VM (12V)
CON103
L-CH
R-CH
Q501, 502, D501 AUDIO MUTE
L-OUT
R-OUT
CKO (16.9344MHz)
IC501 SM5877AM AUDIO DAC
16.9344MHz
DEMP
BCK
PCMD
LRCK
FOK
IC202 PST600DMT RESET IC
RST
NTSC
PAL
PAL60
SW
TVMSW
ILSW
IC201 MB89627 μ-COM
XVCDRST (BV1)
INTRPT (BV2)
BM0～BM7
A13～A15
ALE
RD
WR
IC205
IC206
IC207
MPEG SIGNAL TIMING GENERATOR
XDS
XWRITE
XDTACK
IC301 CL484 C-CUBE MPEG DECODER
MA0 ～ MA9
IC303 LH5317XX 512K ROM
MD0 ～ MD13
RASO
UCASIN
UCAS
MWE
LCASIN
LCAS
MA0～MA8
IC302 HM514260 4M DRAM
MD0 ～ MD15
CON102
I/O BUSY
O-SD
O-CLK
I-SD
I-DISH.S
PS151 GP1S53V TURN TABLE SENSOR
I-SW
S101 OPEN/CLOSE
S102 UP/DOWN SW
BM0 ～ BM7
A8 ～ A12
8.00MHz x
BM0 ～ BM7
IC204 BR6265BF-NIOSL 64K SRAM
A0 ～ A7
IC203 74HC373 ADDRESS TIMING GENERATOR
A0 ～ A2
B
G
R
IC402 BU2173F CLOCK GENERATOR
F01
F02
13.5MHz
F01 40.5MHz (MPEG)
F02 27.0MHz (VCD)
28.636MHz (NTSC)
28.375MHz (PAL)
VCD/CDG
XNTSC
O-CLOSE
O-OPEN
O-DISH-R
O-DISH-S
IC103 LB1644 TRAY, TURN TABLE DRIVER
M401 TURN TABLE MOTOR
TRAY MOTOR
HSYNC
VSYNC
BD0 ～ BD7
GD0 ～ GD7
RD0 ～ RD7
F02
ENCRST
VCD/CDG
XNTSC
PAL/PAL60
IC401 BU1417K VIDEO DAC + RGB ENCODER
C OUT
Y OUT
VCD/CDG
VIDEO OUT
Q402, 403 Y SIGNAL BAND SWITING
TO A MAIN VCD C.B CON102

WIRING-1 (V3L: MAIN VCD／CD MECHA)

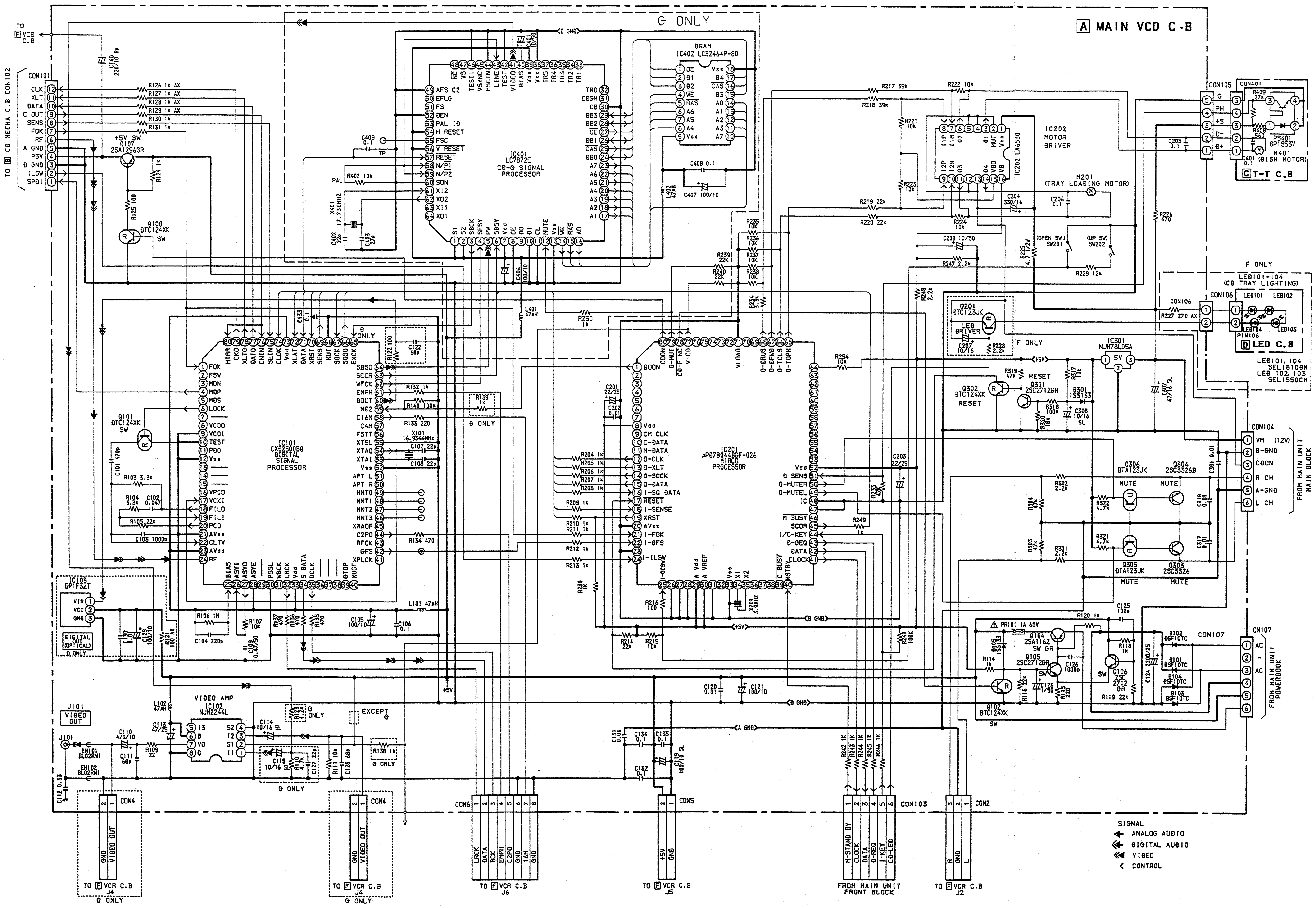

PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
Q101
C127
C128
SFR101
SFR102
SFR103
TP2 (TB)
TP3 (VREF)
TP1 (RF)
SW101
M101
M102
CON102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
FC2
FC401
C T-T C.B
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
TO F VCD C.B J6
CON6
(GRY) (PUL) (BLU) (GRN) (YEL) (ORG) (RED) (BRN)
TO F VCD C.B
(GRN)
G ONLY
TO F VCD C.B J4
CON4
(BLK) (YEL)
A MAIN VCD C.B
TO F VCD C.B J5
CON5
(RED) (BLK)
SW201 (OPEN)
SW202 (UP)
FROM MAIN UNIT FRONT BLOCK
CON101
IC102
IC201
IC101
IC401
IC202
IC402
IC301
CON103
CON104
CON105
CON106
CON107
IC103
EM101
EM102
J101
TO F VCD C.B J4
EXCEPT G
J101 VIDEO OUT
DIGITAL OUT (OPTICAL)
D ONLY
F ONLY
D LED C.B
PIN 106
LED 104
LED 103
LED 102
LED 101
LED101-104 (CD TRAY LIGHTING)
M201
M201 (TRAY LOADING MOTOR)
TO F VCD C.B
(RED)
FC401
TO F VCD C.B J2
CON2
(WHT)
(RED)
(GRY)
CN107
(BLU) (BLU) (BLU) (YEL) (BLK) (BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK

CHEMATIC DIAGRAM-1 (V3L: CD MECHA)

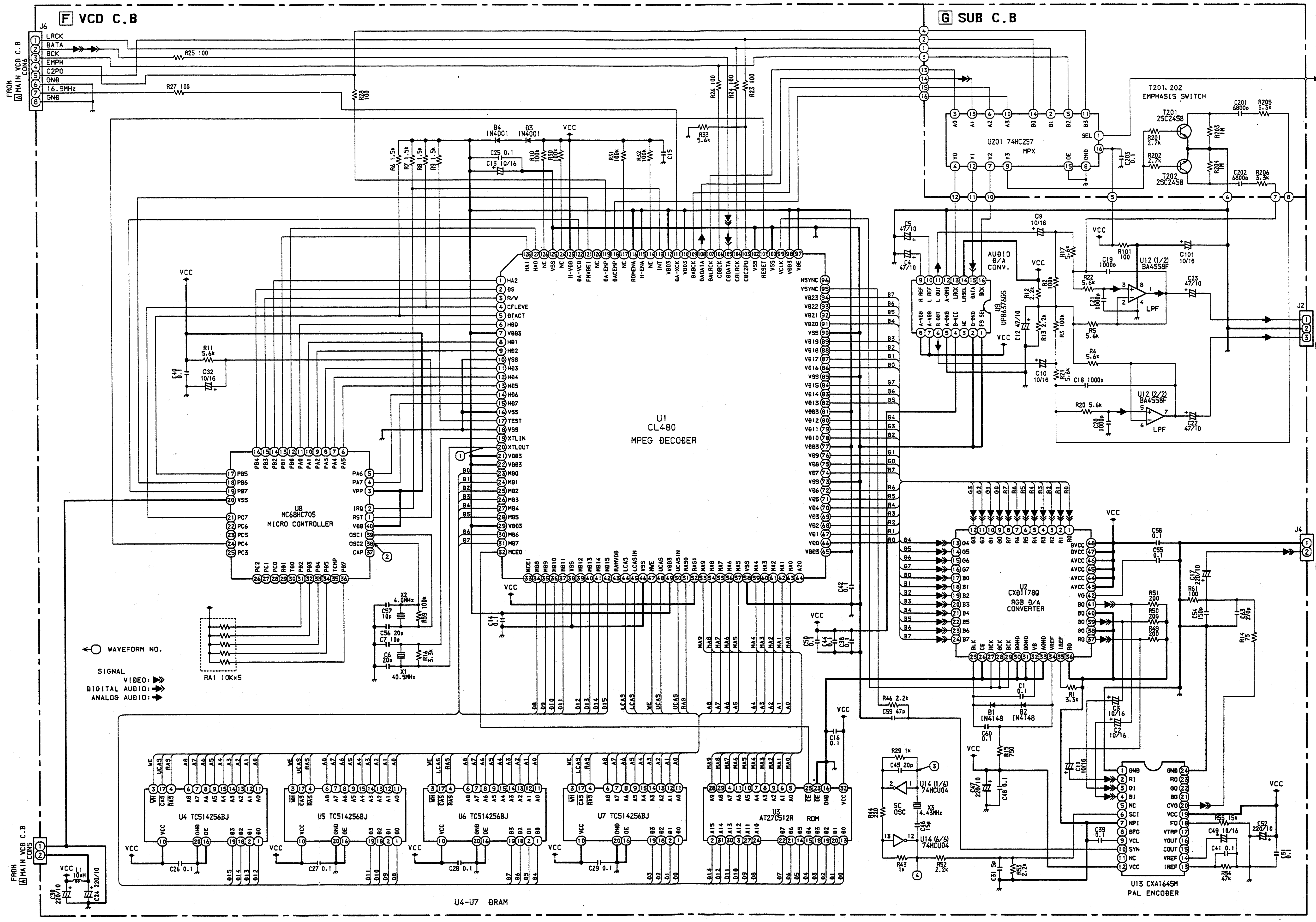


TO A MAIN VCD C.B CON101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
C125 47/16 5L
C123 47/6.3 5L
+5V
GND
R125 4.7
C126 0.01
C136 0.01
TP1 (RF)
R134 4.7k
C137 1µ
R135 180k
C107 0.01
R107 56k
R108 2.7k
C108 1µ
C111 22/6.3 5L
R111 15k
R109 100k
R124 1k
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
C118 0.22
C117 0.1
C116 2200p
R117 680k
R116 10k
R115 18k
R114 47k
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10k
R104 22k
R103 12k
IC101
CXA1782BQ
RF SIGNAL
SERVO PROCESSOR
FOCUS BIAS ADJ.
C128 47/6.3 5L
R127 10
Q101
2SA1162GR
LD DRIVE
C138 1000p
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
C120 47/6.3 5L
C121 47/6.3 5L
TP2 (TB)
TP3 (VREF)
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
R140 82kF
R141 68kF
R142 68kF
R143 68kF
R144 68kF
R145 82kF
R146 82
CON101
R121 1k
R120 1k
R119 1k
R122 10
C129 2200p
R128 15k
R129 10k
R123 100k
SW101
INSIDE LIMIT SWITCH
M101
SPINDLE MOTOR
R130
C131 0.1
M102
SLED MOTOR
C135 0.1
R133 10
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102
BA6791FP
R132 10
C134 0.1
C133 0.1
R131 10
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY
KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

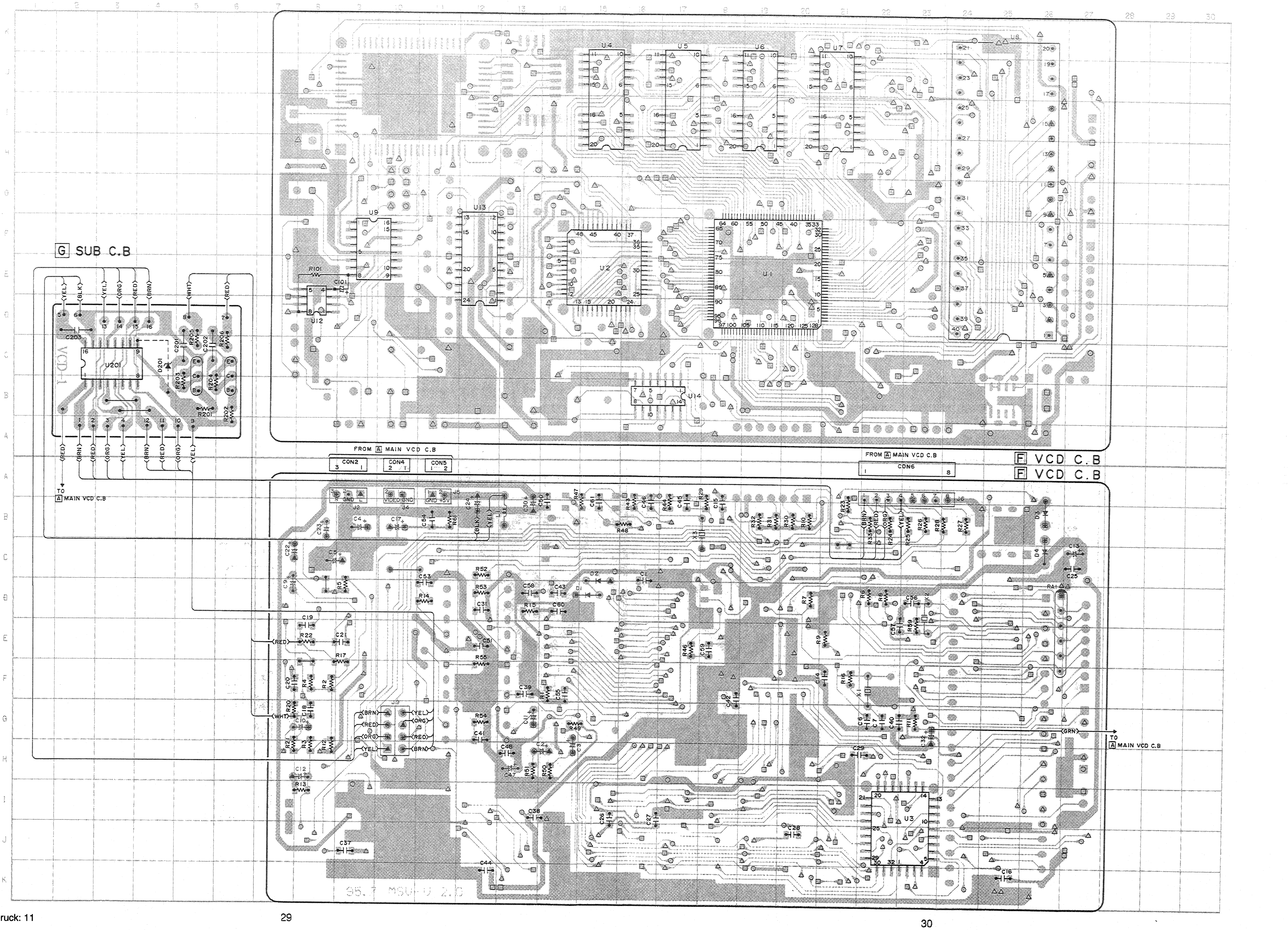
SCHEMATIC DIAGRAM-2 (V3L: MAIN VCD)

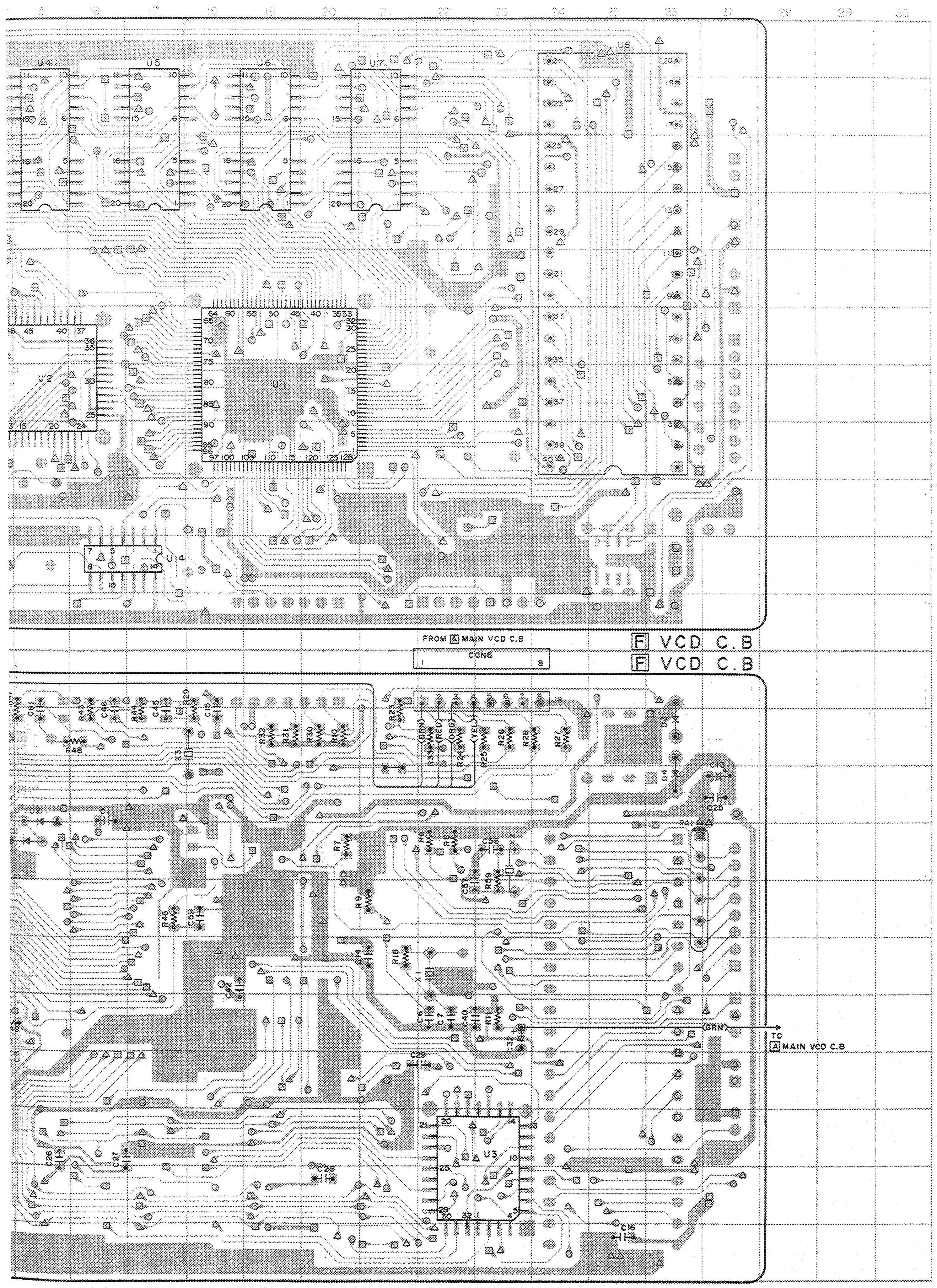

A MAIN VCD C.B
G ONLY
TO F VCD C.B
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
Q107 2SA1296GR
Q108 DTC124XK SW
IC401 LC7872E CD-G SIGNAL PROCESSOR
DRAM IC402 LC32464P-80
X401 17.7345MHz
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
Q101 DTC124XK SW
IC103 GP1F32T
DIGITAL OUT (OPTICAL)
D ONLY
L401 47µH
L101 47µH
IC201 µPD78044BGF-026 MICRO PROCESSOR
X201 3.9MHz
IC202 LA6530 MOTOR DRIVER
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
PS401 GP1S53V
M401 (DISH MOTOR)
C T-T C.B
F ONLY
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SEL1810DM
LED 102, 103 SEL1550CM
Q201 DTC123JK LED DRIVER
IC301 NJM78L05A
Q302 DTC124XK RESET
Q301 2SC2712GR
D301 1SS133
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
Q306 DTA123JK MUTE
Q304 2SC3326B MUTE
Q305 DTA123JK MUTE
Q303 2SC3326 MUTE
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR SW
Q106 2SC2712 GR
Q102 DTC124XK SW
CN107
CON107
AC
FROM MAIN UNIT POWERBOOK
J101 VIDEO OUT
EM101 BL02RN1
EM102 BL02RN1
VIDEO AMP IC102 NJM2244L
EXCEPT G
G ONLY
CON4
GND
VIDEO OUT
TO F VCR C.B J4
G ONLY
CON6
LRCK
DATA
BCK
EMPH
C2PO
GND
16M
GND
TO F VCR C.B J6
CON5
+5V
GND
TO F VCR C.B J5
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
CON2
R
GND
L
TO F VCR C.B J2
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

SCHEMATIC DIAGRAM-3 (V3L: VCD)


F VCD C.B
G SUB C.B
J6
FROM A MAIN VCD C.B CON6
LRCK
DATA
BCK
EMPH
C2PO
GND
16.9MHz
GND
R25 100
R27 100
R28 100
R26 100
R24 100
R23 100
R33 5.6k
D4 1N4001
D3 1N4001
VCC
C25 0.1
C13 10/16
R6 1.5k
R7 1.5k
R8 1.5k
R9 1.5k
R10 100k
R30 100k
R31 100k
R32 100k
C15
U1
CL480
MPEG DECODER
U8
MC68HC705
MICRO CONTROLLER
R11 5.6k
C32 10/16
C40 0.1
X2 4.0MHz
C57 10p
R59 100k
C56 20p
C7 10p
C6 20p
X1 40.5MHz
R16 5.3k
RA1 10K×5
WAVEFORM NO.
SIGNAL
VIDEO:
DIGITAL AUDIO:
ANALOG AUDIO:
C14 0.1
C42 0.1
C50 0.1
C44 0.1
C38 0.1
C16 0.1
U4 TC514256BJ
U5 TC514256BJ
U6 TC514256BJ
U7 TC514256BJ
U3 AT27C512R ROM
U4-U7 DRAM
C26 0.1
C27 0.1
C28 0.1
C29 0.1
FROM A MAIN VCD C.B CON5
L1 10μH
C30 220/10
C24 220/10
U201 74HC257
MPX
C203 0.1
T201, 202
EMPHASIS SWITCH
T201 2SC2458
T202 2SC2458
R201 2.7k
R202 2.7k
R203 1M
R204 1M
C201 6800p
R205 3.3k
C202 6800p
R206 3.3k
V-CB TO A MAIN VCD C.B
C5 47/10
C4 47/10
C9 10/16
AUDIO D/A CONV.
U9 UPD6376GS
C12 47/10
R12 2.2k
R13 2.2k
R2 100k
R3 100k
R17 5.6k
R101 100
C19 1000p
C101 10/16
R22 5.6k
C21 1000p
U12 (1/2) BA4558F
LPF
C23 47/10
R5 5.6k
R4 5.6k
C10 10/16
R21 5.6k
C18 1000p
U12 (2/2) BA4558F
R20 5.6k
C20 1000p
C22 47/10
J2
FROM A MAIN VCD C.B CON2
U2
CXD1178Q
RGB D/A
CONVERTER
C58 0.1
C55 0.1
J4
FROM A MAIN VCD C.B CON4
C17 220/10
R61 100
C54 150p
C63 270p
R51 200
R50 200
R49 200
R14 75
R46 2.2k
C59 47p
C1 0.1
R1 3.3k
D1 1N4148
D2 1N4148
C60 0.1
R15 750
C3 10/16
C2 10/16
C11 10/16
R29 1k
C45 20p
U14 (1/6) 74HCU04
SC OSC
X3 4.43MHz
C46 5p
R44 68k
U14 (6/6) 74HCU04
R43 1k
R52 2.2k
C47 220/10
C48 0.1
C31 5p
R53 2.2k
C39 0.1
U13 CXA1645M
PAL ENCODER
R55 15k
C49 10/16
C41 0.1
C52 220/10
C51 0.1
R54 47k

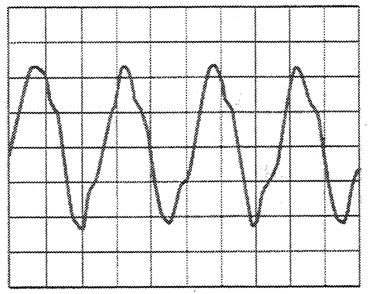
WIRING-2 (V3L: VCD)


G SUB C.B
VCD-1
U201
F VCD C.B
F VCD C.B
FROM A MAIN VCD C.B
CON2
CON4
CON5
CON6
TO A MAIN VCD C.B
TO A MAIN VCD C.B
U1
U2
U3
U4
U5
U6
U7
U8
U9
U12
U13
U14
J2
J4
J6
J9
(YEL)
(BLK)
(ORG)
(RED)
(BRN)
(WHT)
(GRN)
35.7 MSU-U 2.0

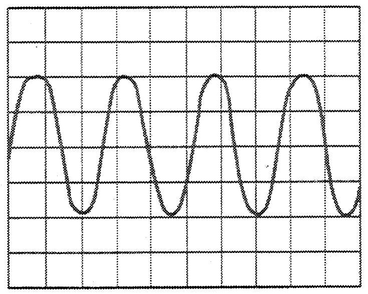

U4
U5
U6
U7
U8
U1
U2
U14
U3
FROM A MAIN VCD C.B
CON6
F VCD C.B
F VCD C.B
(BRN)
(RED)
(ORG)
(YEL)
(GRN)
TO A MAIN VCD C.B
X1
X2
X3
RA1

WAVE FORM

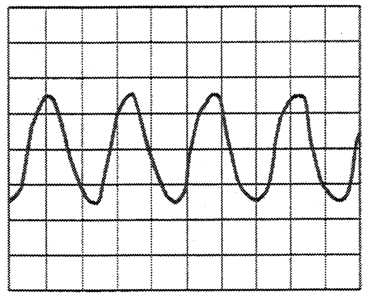
① U1 Pin ⑳ (XLT OUT) VOLT/DIV: 1V TIME/DIV: 10nS



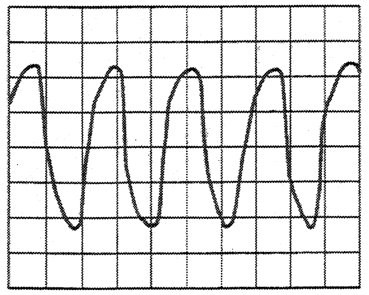
② U8 Pin ㊴ (OSC2) VOLT/DIV: 1V TIME/DIV: 100nS



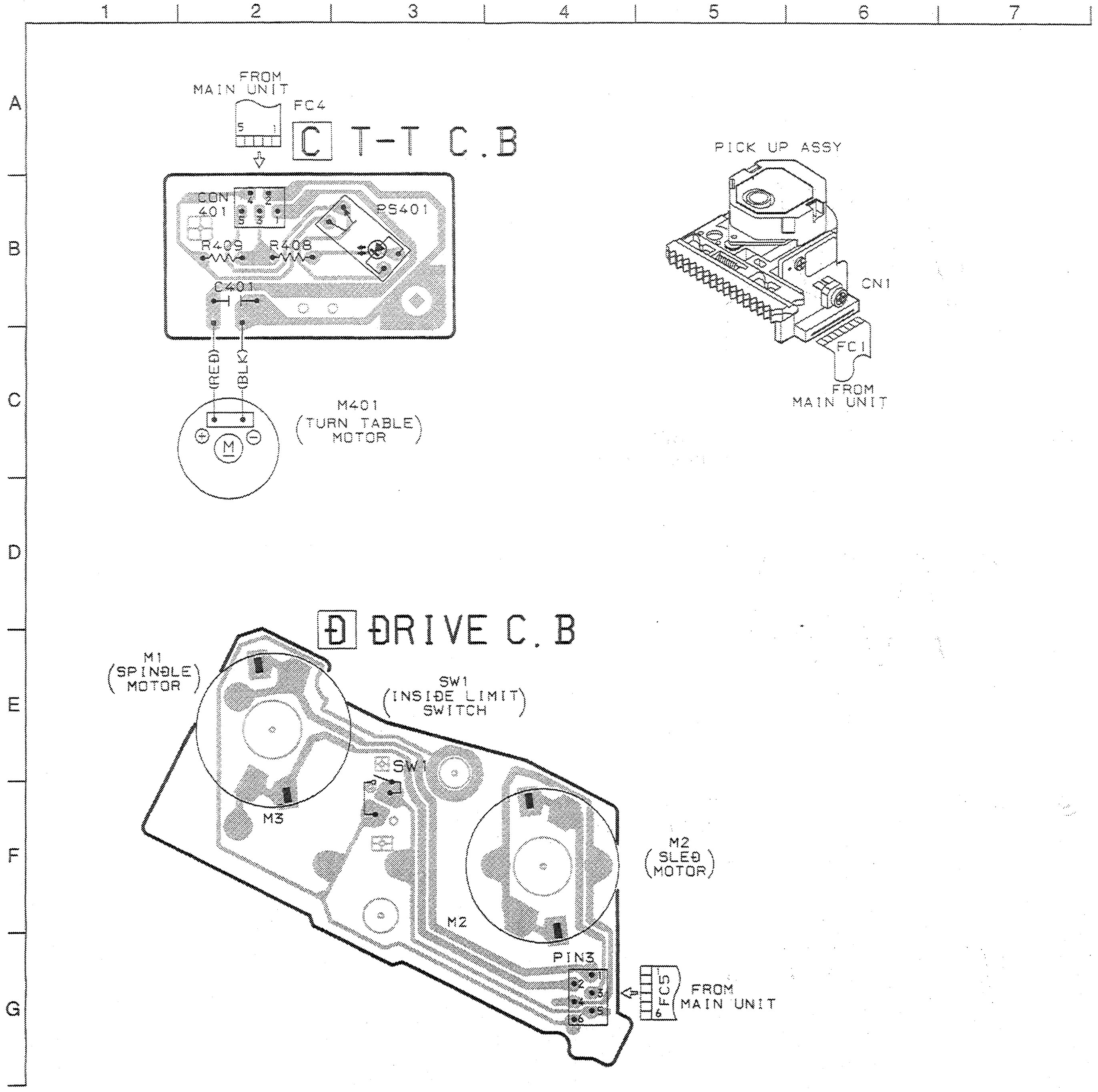
③ U14 Pin ① VOLT/DIV: 1V TIME/DIV: 100nS



④ U14 Pin ⑫ VOLT/DIV: 1V TIME/DIV: 100nS

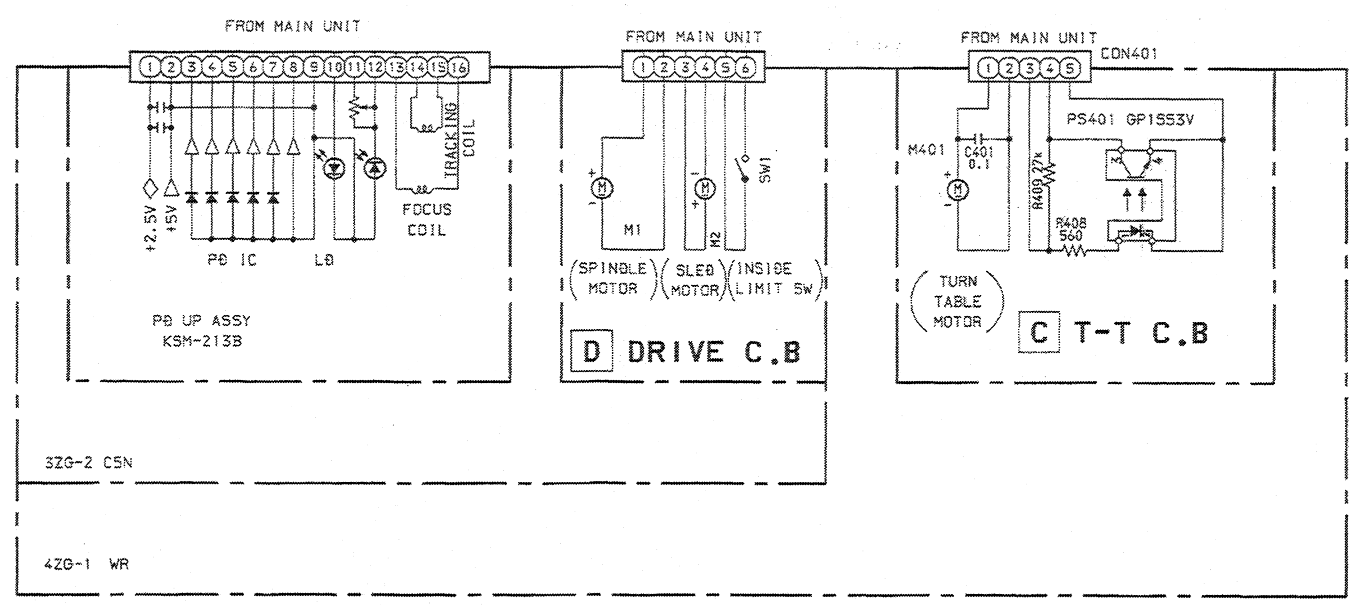


WIRING-3 (WR)



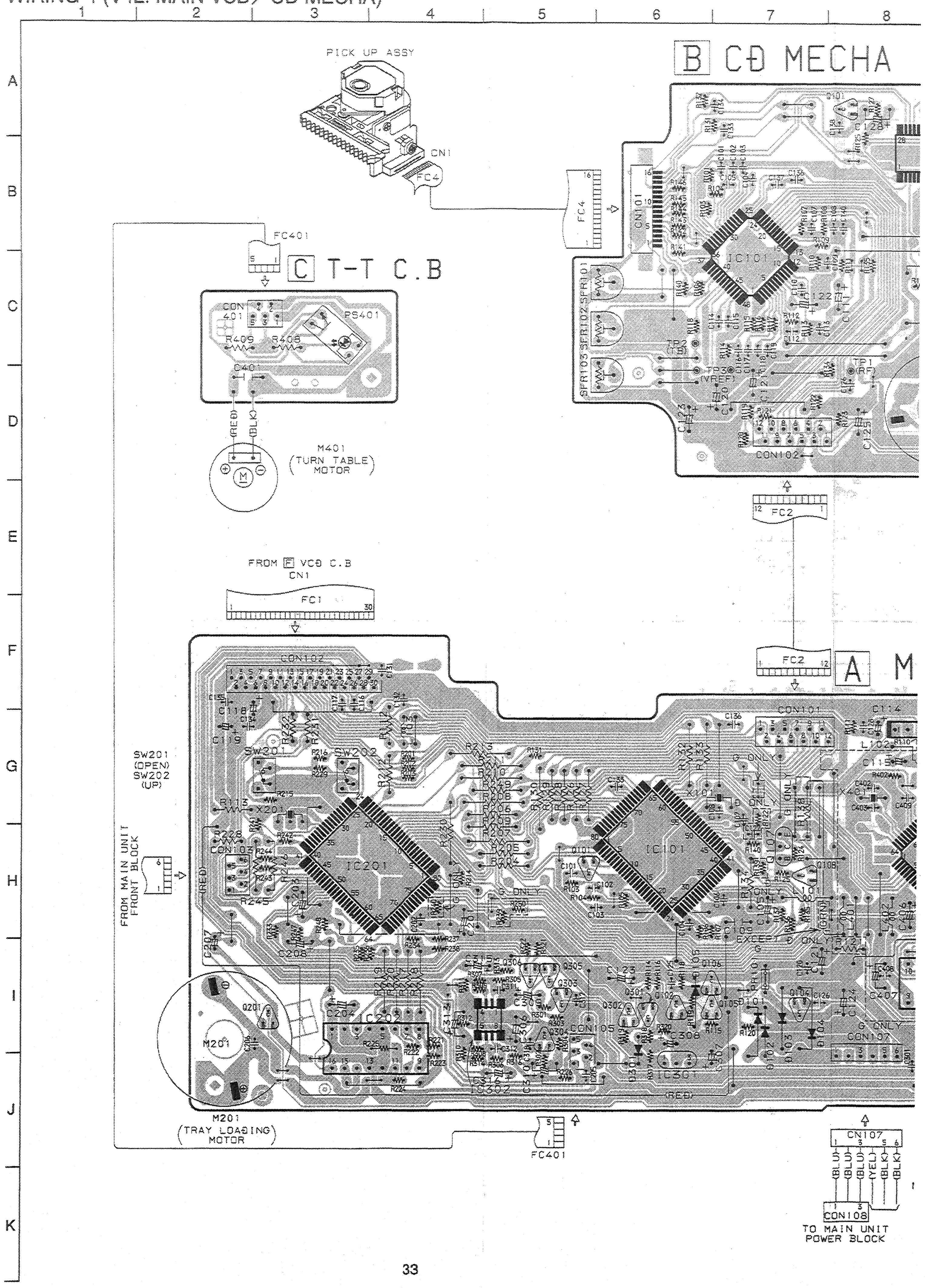
FROM MAIN UNIT
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
D DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
M3
M2 (SLED MOTOR)
M2
PIN3
FC5
FROM MAIN UNIT

SCHEMATIC DIAGRAM-4 (WR)



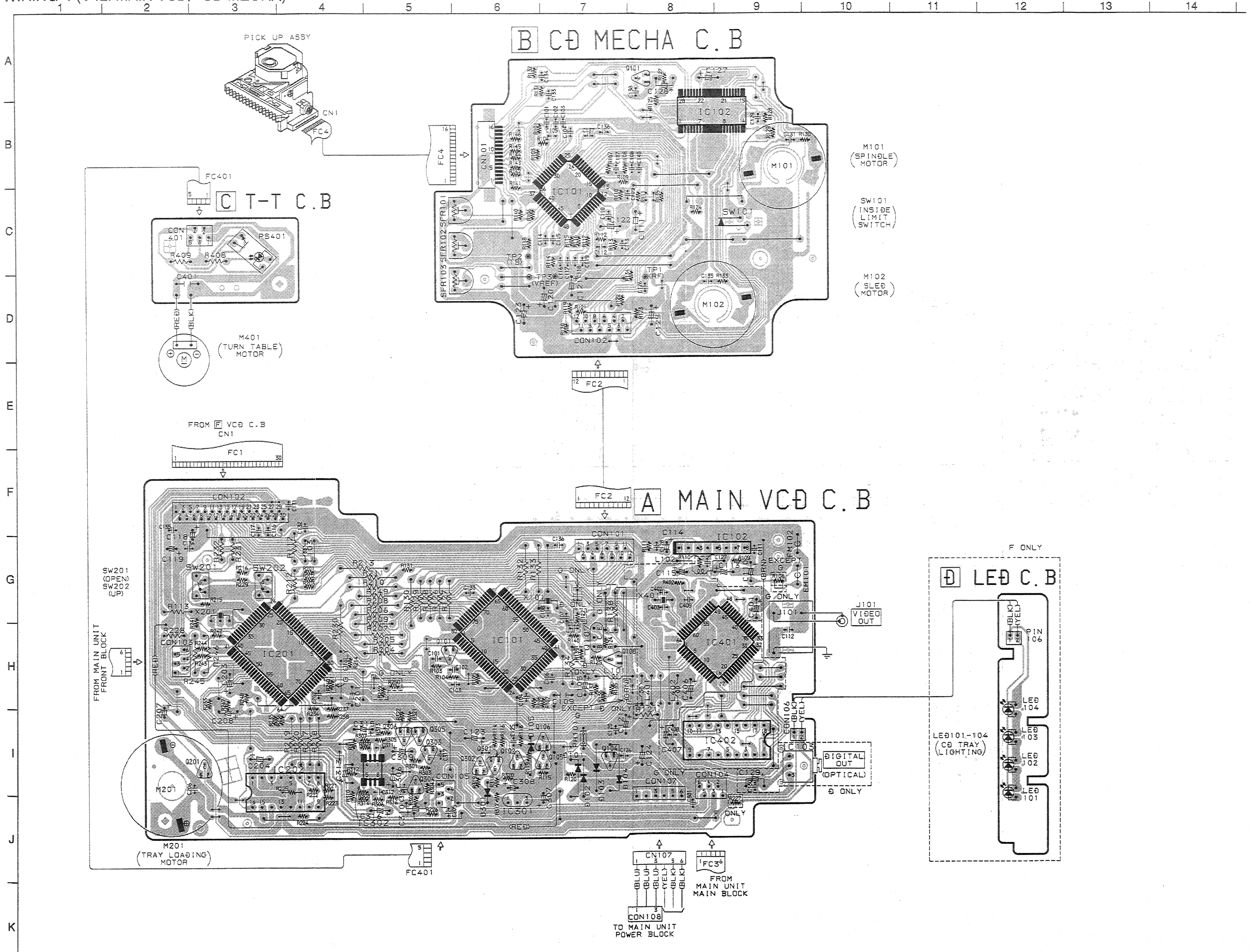
FROM MAIN UNIT
FROM MAIN UNIT
FROM MAIN UNIT
CON401
+2.5V
+5V
PD IC
LD
FOCUS COIL
TRACKING COIL
PD UP ASSY KSM-213B
M1
M2
SW1
(SPINDLE MOTOR)
(SLED MOTOR)
(INSIDE LIMIT SW)
D DRIVE C.B
M401
C401 0.1
R409 22k
R408 560
PS401 GP1S53V
(TURN TABLE MOTOR)
C T-T C.B
3ZG-2 C5N
4ZG-1 WR

WIRING-4 (V4L: MAIN VCD／CD MECHA)

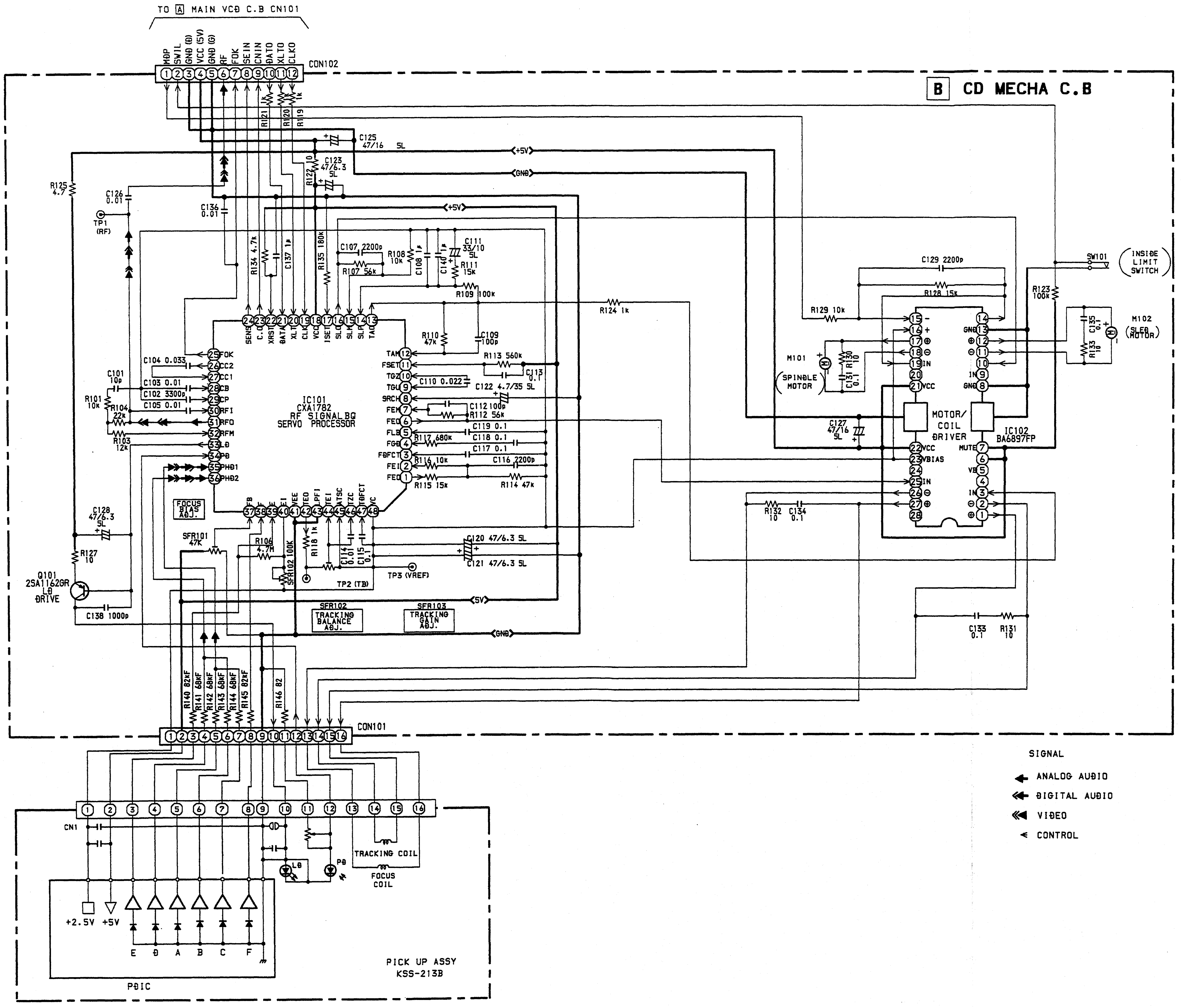


PICK UP ASSY
CN1
FC4
B CD MECHA
CN101
IC101
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
FC2
FC401
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
FC2
A M
CON102
CON101
SW201 (OPEN)
SW202 (UP)
SW201
SW202
IC201
IC101
CON105
FROM MAIN UNIT FRONT BLOCK
(RED)
M201
(TRAY LOADING MOTOR)
IC202
IC301
CON105
CON107
FC401
CN107
(BLU)
(BLU)
(YEL)
(BLK)
(BLK)
CON108
TO MAIN UNIT POWER BLOCK

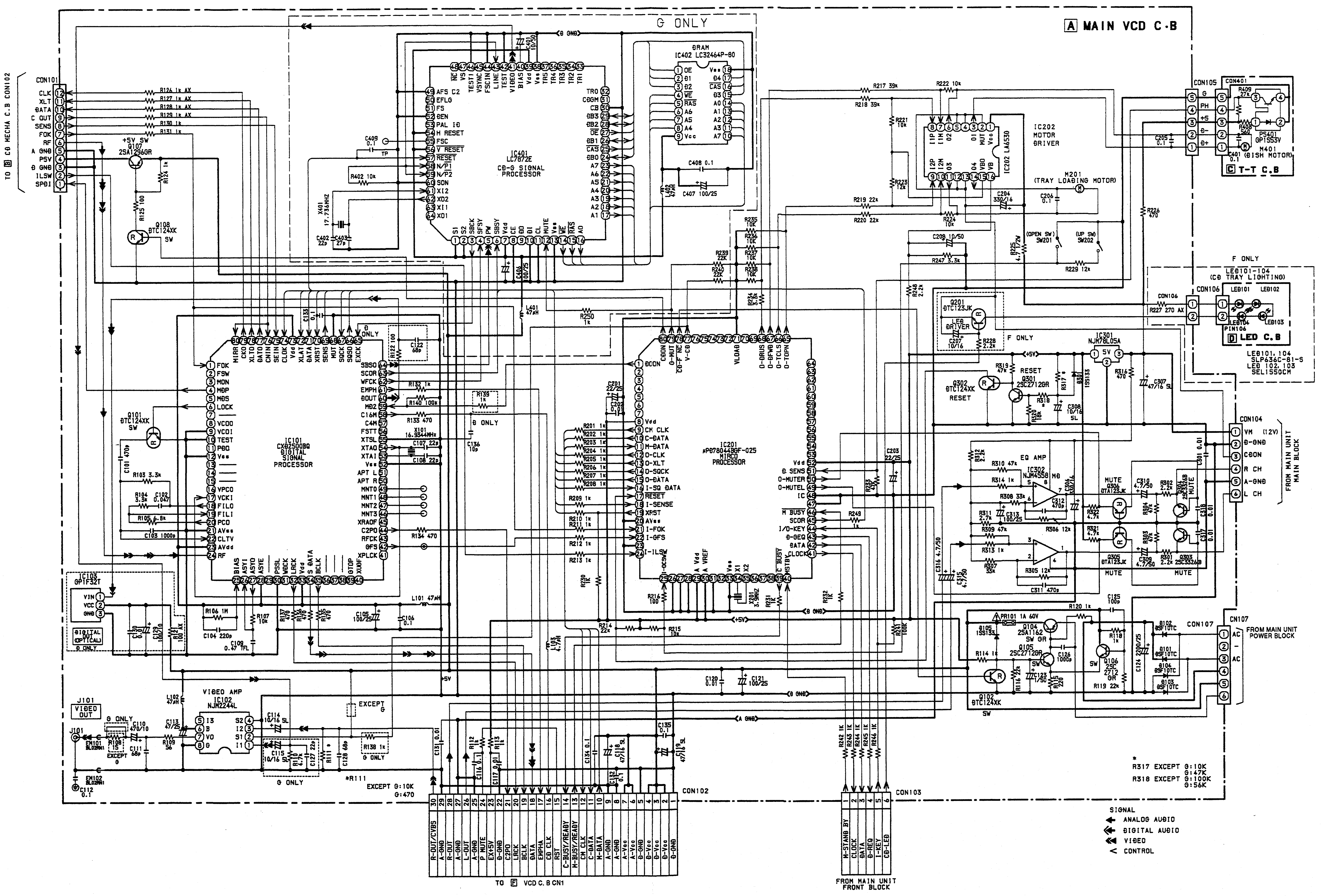
WIRING-4 (V4L: MAIN VCD／CD MECHA)

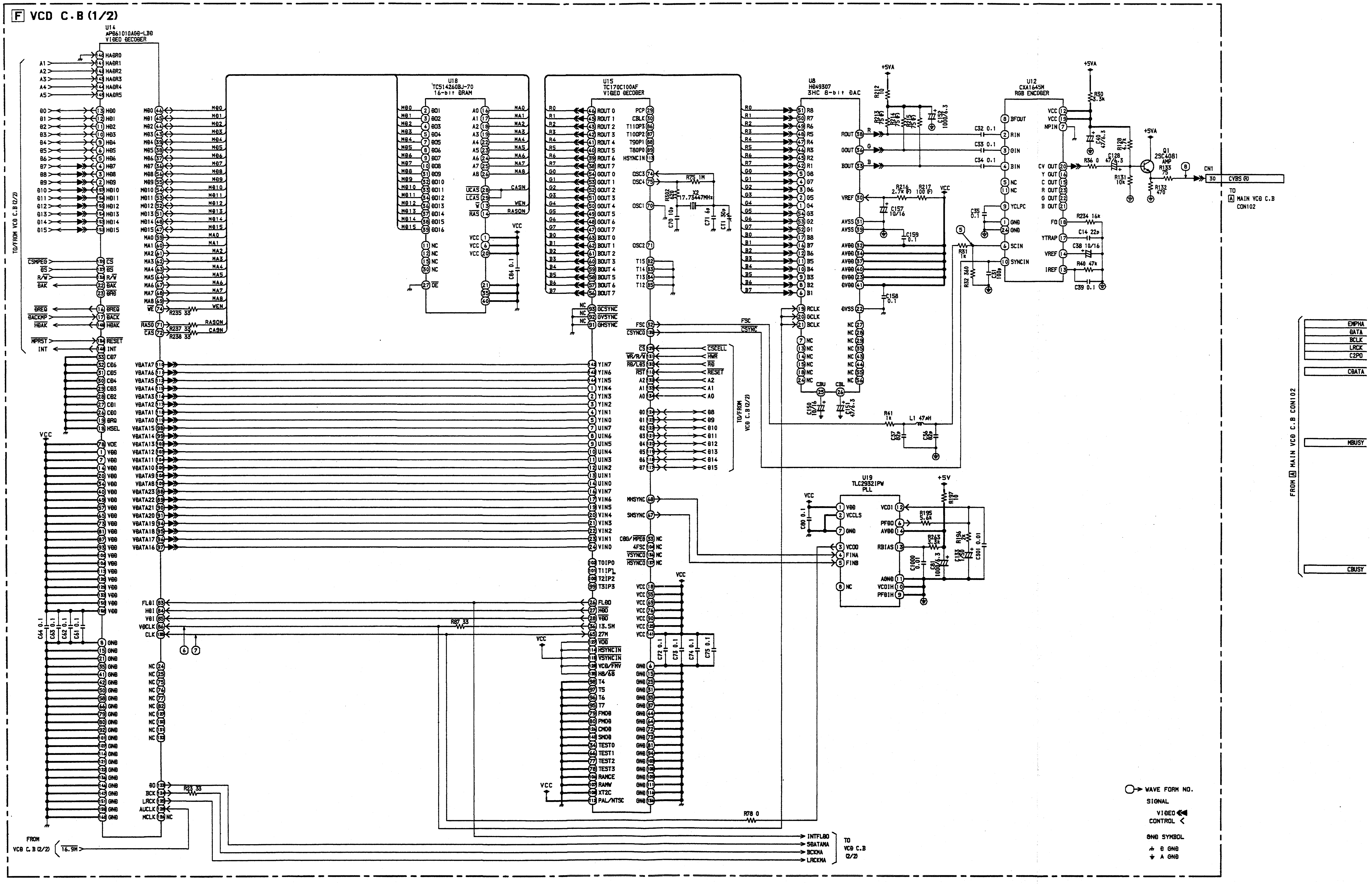

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
M101
M101 (SPINDLE MOTOR)
SW101
SW101 (INSIDE LIMIT SWITCH)
M102
M102 (SLED MOTOR)
SFR101
SFR102
SFR103
TP1 (RF)
TP2 (E)
TP3 (VREF)
CON102
FC2
FC401
C T-T C.B
CON401
PS401
R405
R406
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
A MAIN VCD C.B
CON102
CON101
IC102
IC201
IC101
IC401
IC402
IC202
IC501
IC502
IC103
CON103
CON104
CON105
CON106
CON107
SW201
SW202
SW201 (OPEN) SW202 (UP)
FROM MAIN UNIT FRONT BLOCK
J101 VIDEO OUT
DIGITAL OUT (OPTICAL)
D ONLY
G ONLY
EXCEPT
M201
M201 (TRAY LOADING MOTOR)
FC401
CN107
(BLU)
(BLU)
(BLU)
(YEL)
(BLK)
(BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK
F ONLY
D LED C.B
PIN 106
(BLK)
(YEL)
LED104
LED103
LED102
LED101
LED101-104 (CD TRAY LIGHTING)

SCHEMATIC DIAGRAM-5 (V4L: CD MECHA)

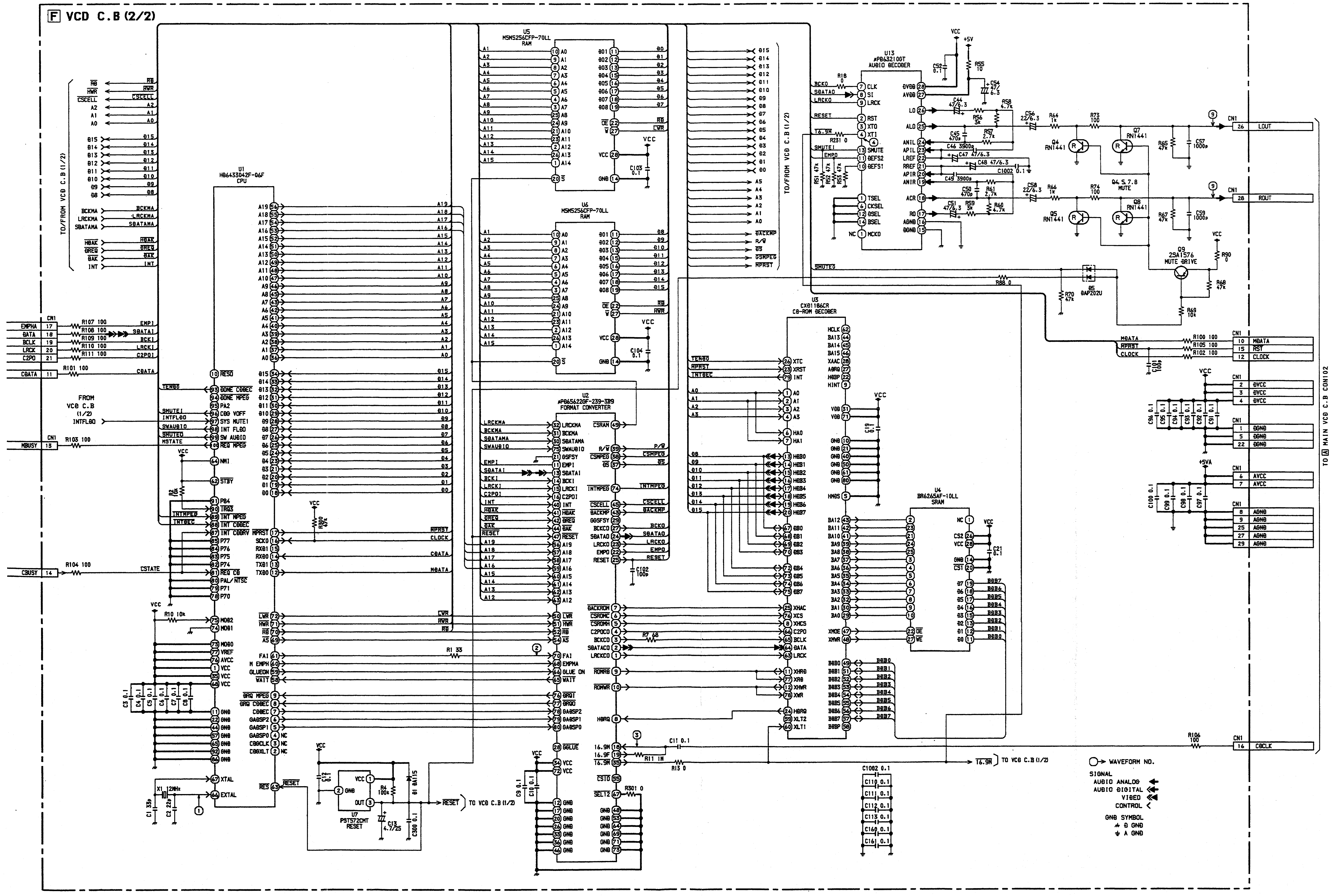

TO A MAIN VCD C.B CN101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
C125 47/16 5L
+5V
GND
C123 47/6.3 5L
R122 10
R121
R120
R119 1k
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
R134 4.7k
C137 1μ
R135 180k
C107 2200p
R107 56k
R108 10k
C108 1μ
C140 1μ
C111 33/10 5L
R111 15k
R109 100k
R124 1k
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.022
C122 4.7/35 5L
C112 100p
R112 56k
C119 0.1
R117 680k
C118 0.1
C117 0.1
R116 10k
C116 2200p
R115 15k
R114 47k
IC101 CXA1782 RF SIGNAL BQ SERVO PROCESSOR
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10k
R104 22k
R103 12k
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
R118 1k
C114 0.01
C115 0.1
SFR102 100K
TP2 (TB)
TP3 (VREF)
C120 47/6.3 5L
C121 47/6.3 5L
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
R140 82kF
R141 68kF
R142 68kF
R143 68kF
R144 68kF
R145 82kF
R146 82
CON101
C129 2200p
R128 15k
R129 10k
R123 100k
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101 (SPINDLE MOTOR)
R130 10
C131 0.1
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6897FP
MUTE
VCC
VBIAS
R132 10
C134 0.1
C133 0.1
R131 10
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E D A B C F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

SCHEMATIC DIAGRAM-6 (V4L: MAIN VCD)


G ONLY
A MAIN VCD C·B
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
+5V SW
Q107 2SA1296GR
Q108 DTC124XK SW
Q101 DTC124XK SW
DRAM IC402 LC32464P-80
IC401 LC7872E CD-G SIGNAL PROCESSOR
X401 17.734MHz
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
IC201 µPD78044BGF-025 MICRO PROCESSOR
X201 3.9MHz
IC202 LA6530 MOTOR DRIVER
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
PS401 GP1S53V
M401 (DISH MOTOR)
C T-T C.B
F ONLY
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SLP636C-01-S
LED 102, 103 SEL1550CM
Q201 DTC123JK LED DRIVER
IC301 NJM78L05A
Q302 DTC124XK RESET
Q301 2SC2712GR
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
EQ AMP
IC302 NJM4558MD
MUTE
Q306 DTA123JK
Q305 DTA123JK
Q302 2SC3326B
Q303 2SC3326B
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR
Q106 2SC2712GR
Q102 DTC124XK SW
CN107
CON107
FROM MAIN UNIT POWER BLOCK
IC103 GP1F32T
DIGITAL OUT (OPTICAL)
J101 VIDEO OUT
VIDEO AMP IC102 NJM2244L
EXCEPT G
*R111 EXCEPT G:10K G:470
CON102
R-OUT/CVBS
A-GND
R-OUT
A-GND
L-OUT
A-GND
P MUTE
EX+5V
D-GND
C2PO
LRCK
BCLK
DATA
EMPHA
CD CLK
RST
C-BUSY/READY
M-BUSY/READY
CM CLK
C-DATA
M-DATA
A-GND
A-GND
A-Vcc
D-GND
D-GND
D-Vcc
D-Vcc
D-GND
TO F VCD C.B CN1
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
* R317 EXCEPT G:10K G:47K
R318 EXCEPT G:100K G:56K
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

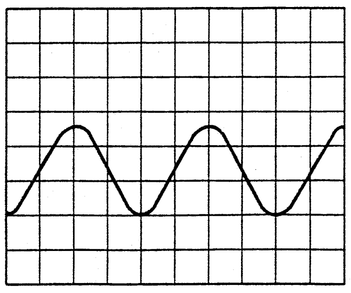

F VCD C.B (1/2)
U14
µPD61010AGG-LBD
VIDEO DECODER
U18
TC514260BJ-70
16-bit DRAM
U15
TC170C100AF
VIDEO DECODER
U8
HD49307
3HC 8-bit DAC
U12
CXA1645M
RGB ENCODER
Q1
2SC4081
AMP
CN1
CVBS
TO
A MAIN VCD C.B
CON102
U19
TLC2932IPW
PLL
X2
17.734475MHz
+5VA
+5V
VCC
TO/FROM VCD C.B (2/2)
FROM A MAIN VCD C.B CON102
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
INTFLBD
SDATAMA
BCKMA
LRCKMA
TO
VCD C.B
(2/2)
FROM
VCD C.B (2/2)
16.9M
WAVE FORM NO.
SIGNAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

SCHEMATIC DIAGRAM-8 (V4L: VCD 2/2)

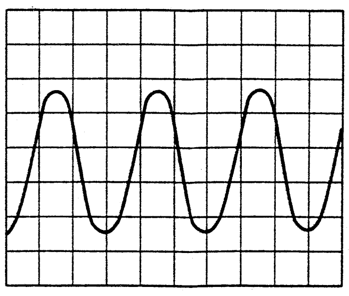

F VCD C.B (2/2)
TO/FROM VCD C.B (1/2)
U1
HD6433042F-06F
CPU
U5
MSM5256CFP-70LL
RAM
U6
MSM5256CFP-70LL
RAM
U2
μPD65622OF-239-3B9
FORMAT CONVERTER
U3
CXD1186CR
CD-ROM DECODER
U13
μPD63210GT
AUDIO DECODER
U4
BR6265AF-10LL
SRAM
U7
PST572CMT
RESET
Q4 RN1441
Q5 RN1441
Q7 RN1441
Q8 RN1441
Q4,5,7,8 MUTE
Q9 2SA1576 MUTE DRIVE
D5 DAP202U
X1 12MHz
D1 DA115
CN1
LOUT
ROUT
MDATA
RST
CLOCK
DVCC
DGND
AVCC
AGND
CDCLK
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
FROM VCD C.B (1/2) INTFLDO
TO VCD C.B (1/2)
RESET
16.9M
TO Ⓐ MAIN VCD C.B CON102
VCC
+5V
+5VA
WAVEFORM NO.
SIGNAL
AUDIO ANALOG
AUDIO DIGITAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

WAVE FORM

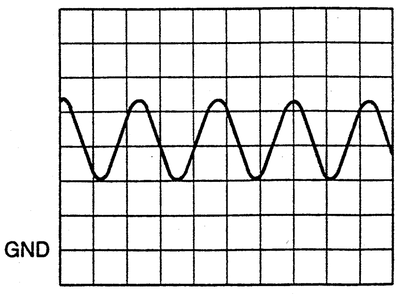
① U1 Pin (66) (EXTAL) VOLT/DIV: 1V TIME/DIV: 20nS



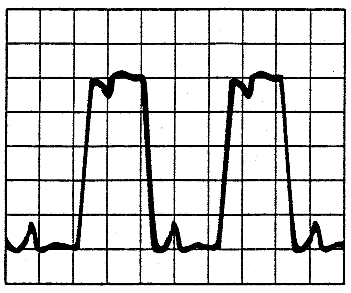
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V TIME/DIV: 20nS



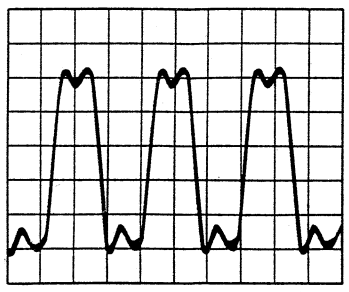
⑤ U12 Pin ⑥ (SC IN) VOLT/DIV: TIME/DIV:



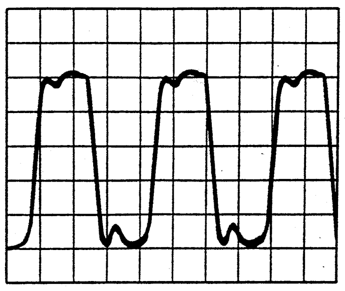
② U2 Pin (70) (FAI) VOLT/DIV: 1V TIME/DIV: 20nS



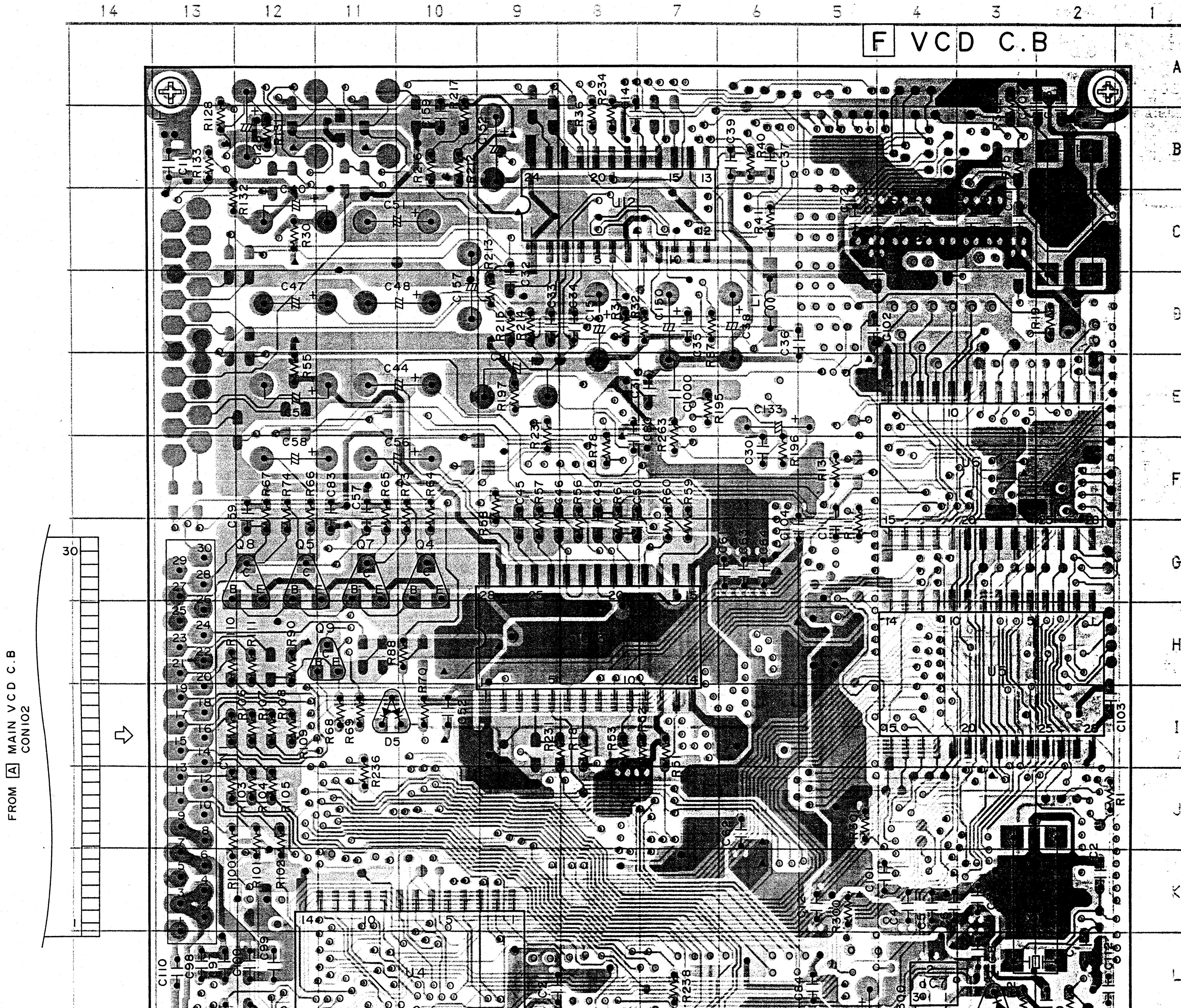
④ U13 Pin ④ (XTI) VOLT/DIV: 1V TIME/DIV: 20nS



⑥ U14 Pin (86) (VD CLK) VOLT/DIV: TIME/DIV:



WIRING-5 (V4L: VCD)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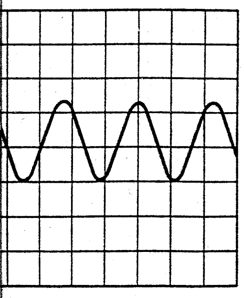
K
L
F VCD C.B
FROM A MAIN VCD C.B CON102
30
1
U12
U13
U4
Q4
Q5
Q7
Q8
Q9
D5
C47
C48
C44
C51
C58
C56
R128
R133
R132
R55
R236
R237
R238
R235
R300
C103
C110

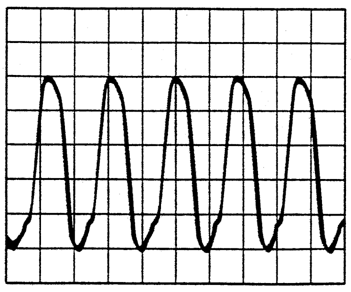
Through-Hole Note

SIGNAL	VCC	+5V	A GND	D GND
○	▲	▲	●	●

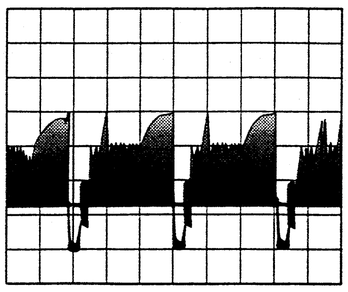
(SC IN) VOLT/DIV: 1.0V
TIME/DIV: 0.1μS



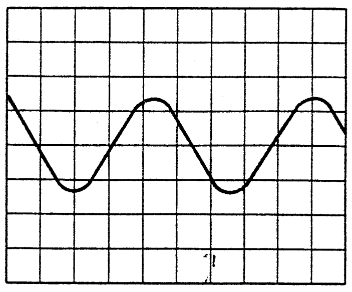
⑦ U14 Pin ⑬⑤ (CLK) VOLT/DIV: 1V
TIME/DIV: 20nS



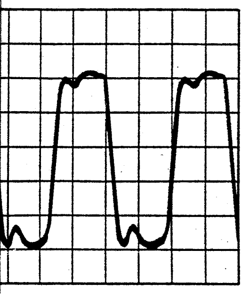
KARAOKE VOLT/DIV: 200mV
TIME/DIV: 20μS



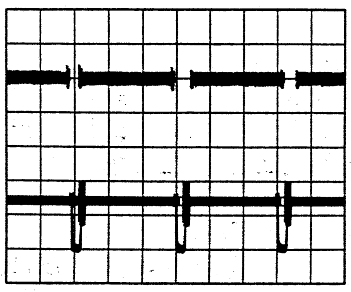
⑨ CN1 Pin ㉖ (L OUT)
CN1 Pin ㉘ (R OUT)
1kHz OUTPUT
VOLT/DIV: 1.0V
TIME/DIV: 0.2mS



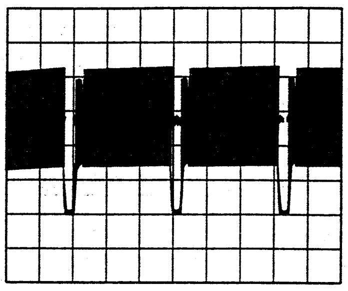
(VD CLK) VOLT/DIV: 1V
TIME/DIV: 20nS

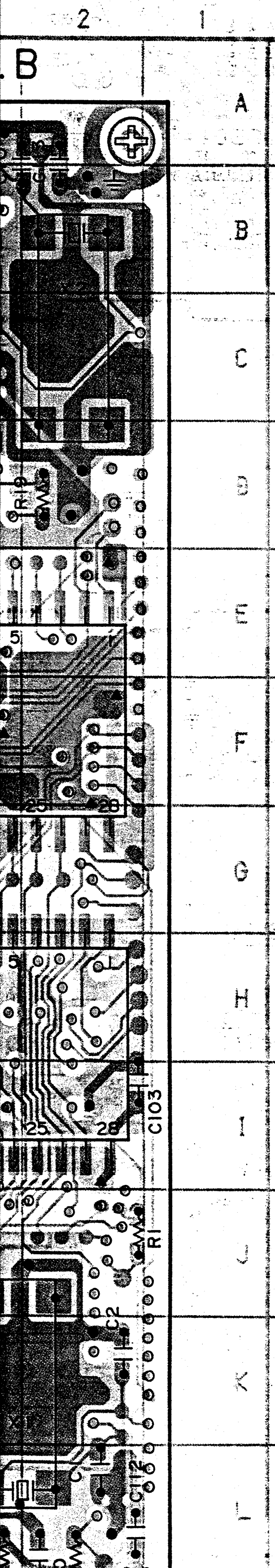


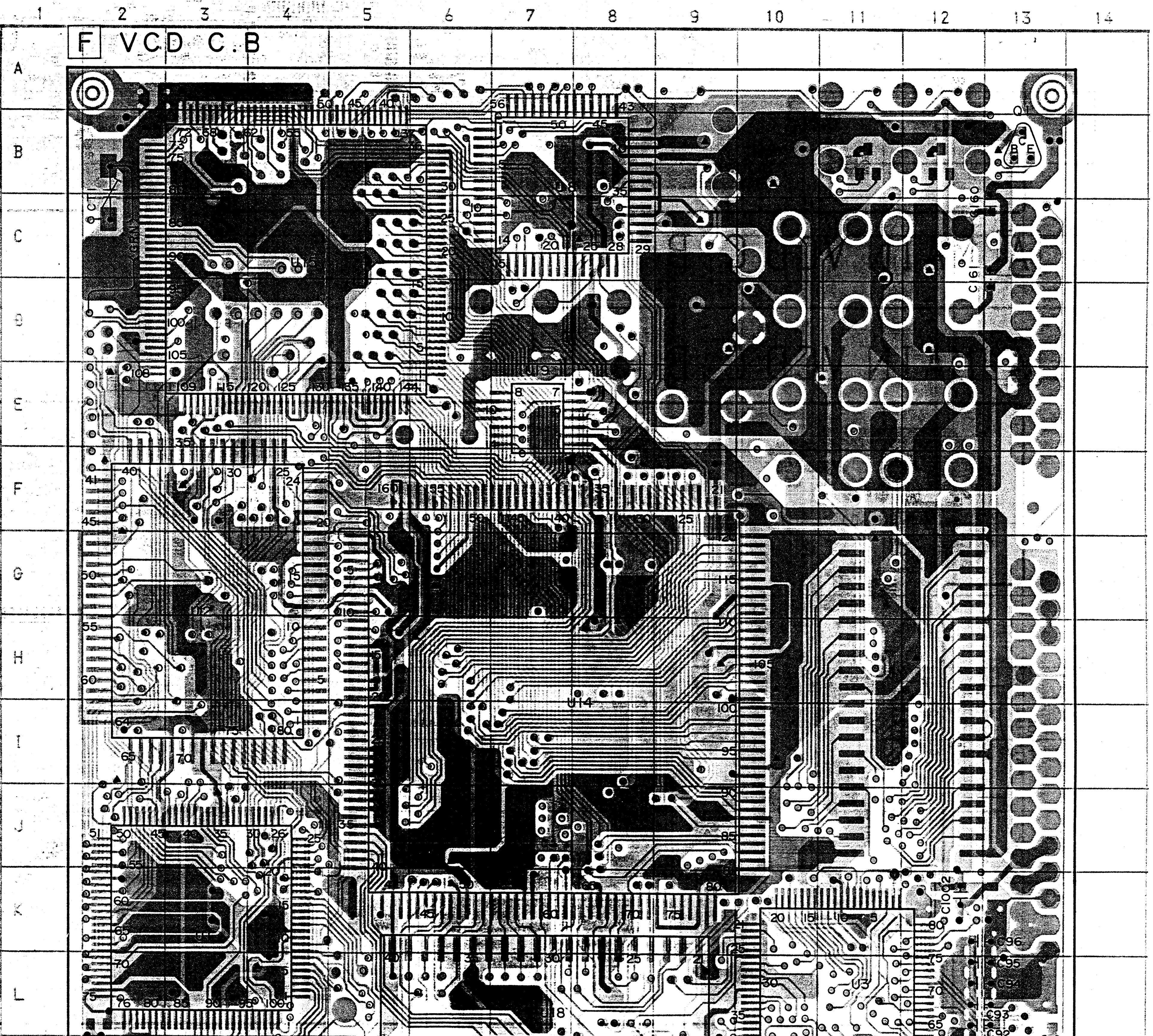
⑧ CN1 Pin ㉚ (CVBS R)
WHITE
VOLT/DIV: 200mV
TIME/DIV: 20μS



BLUE VOLT/DIV: 100mV
TIME/DIV: 20μS



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F VCD C.B
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C
D
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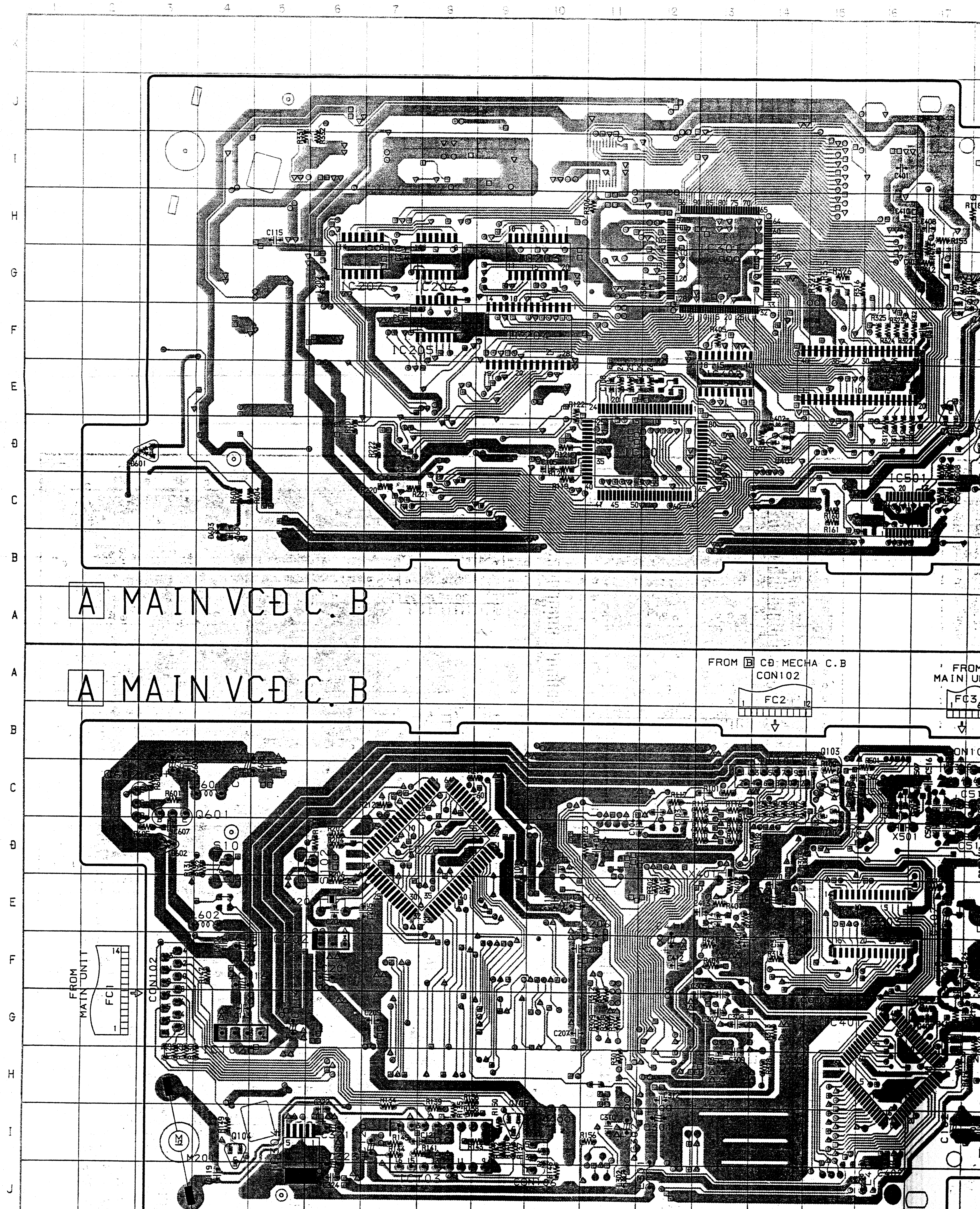
G
H
I
J
K
L
M
U15
U14
U3
Q1
B C E
C61
C102
C96
C95
C94
C93
C92
C91

WIRING-6 (V5: MAIN VCD)


A MAIN VCD C.B
A MAIN VCD C.B
FROM B CD MECHA C.B
CON102
FC2
FROM MAIN UNIT
FC1
CON102
FC401
IC301
IC207
IC206
IC205
IC501
IC303
CON106
Q601
Q103
Q104
M201
X501
S101
C115
C401
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J
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G
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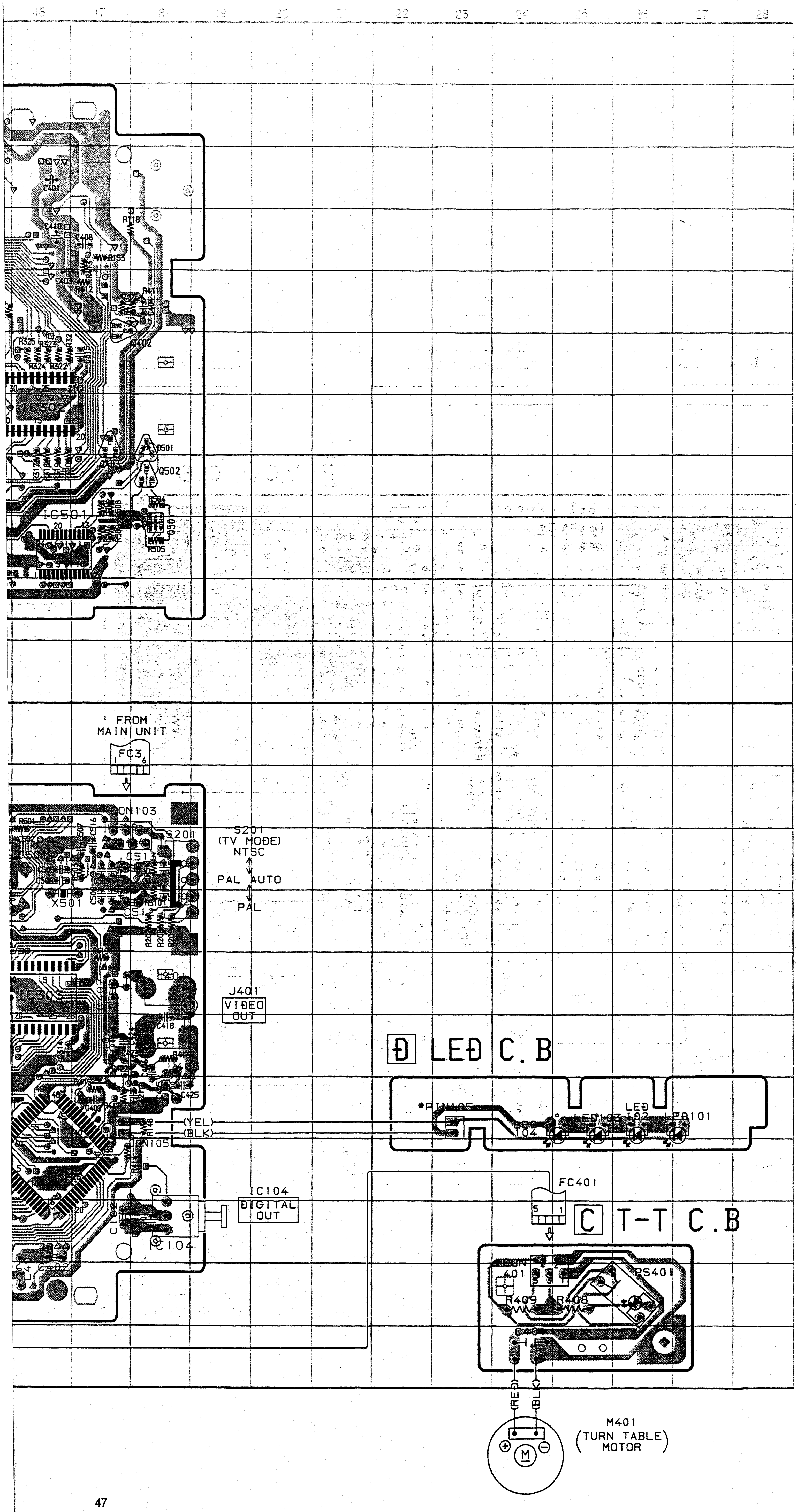
E
D
C
B
A
K


16
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24
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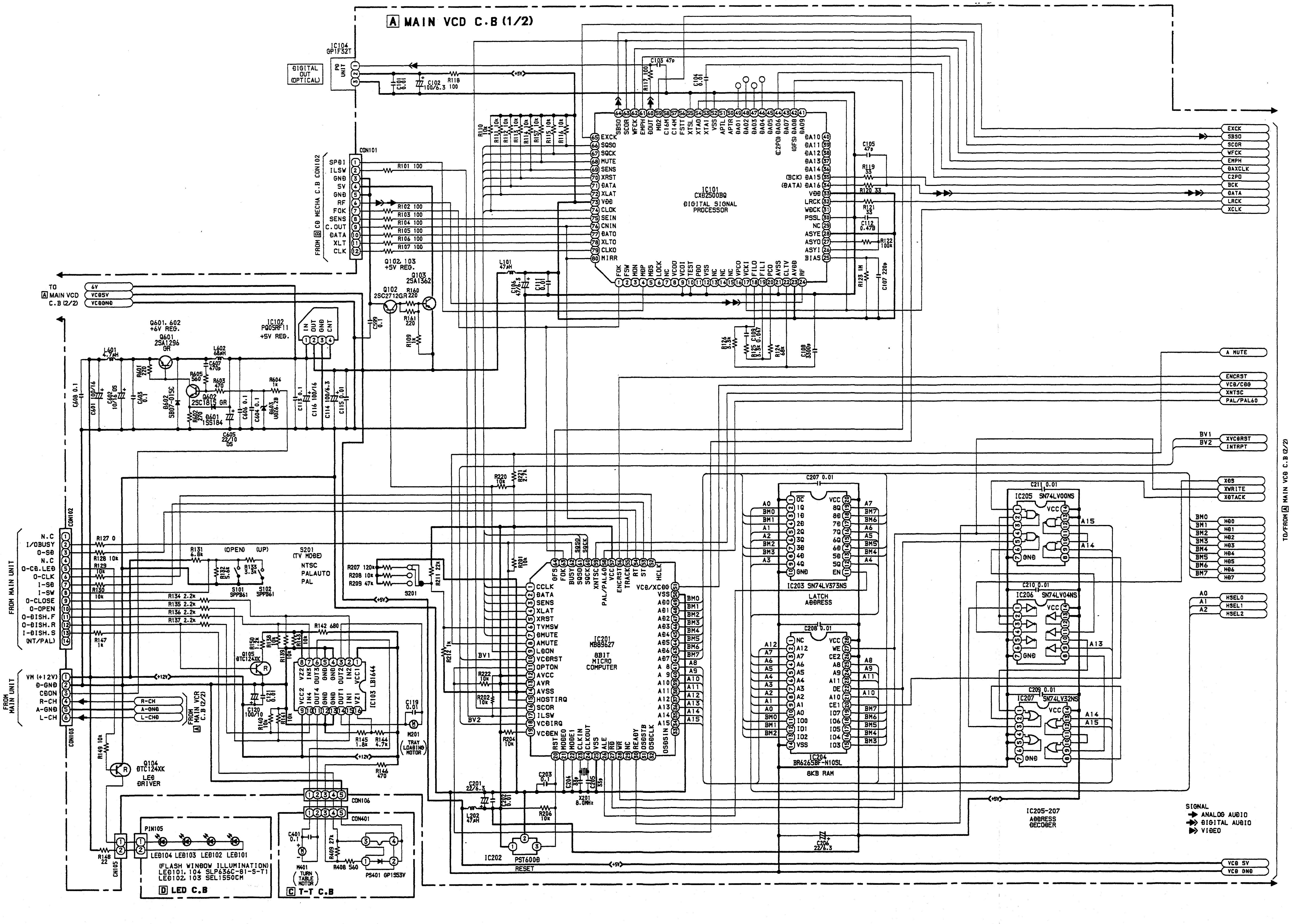
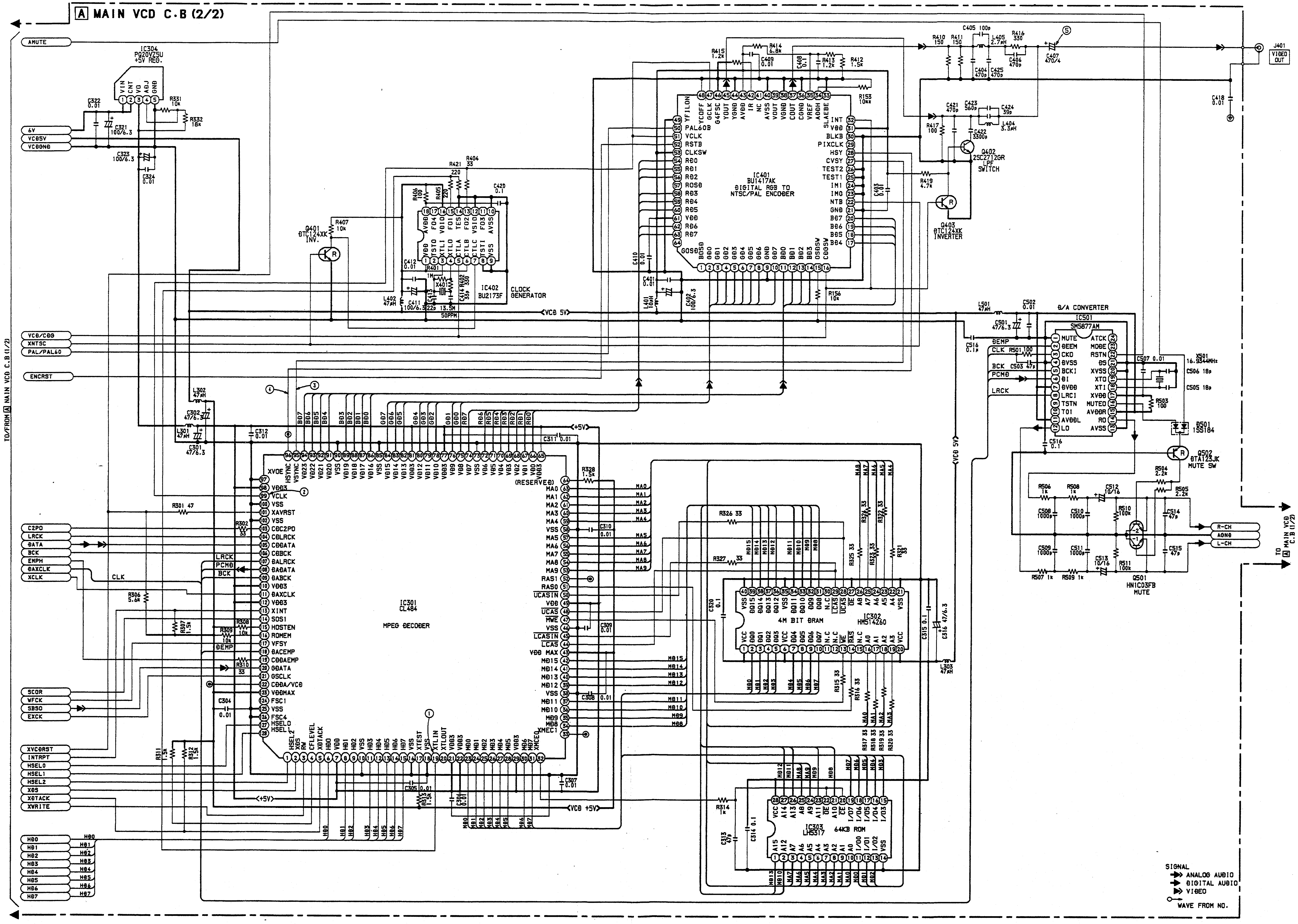
26
27
28
C401
C410
C408
R118
R155
C405
R412
R411
Q402
R325
R323
R324
R322
IC502
Q501
Q502
IC501
R505
FROM
MAIN UNIT
FC3
CN103
S201
C513
X501
S201
(TV MODE)
NTSC
PAL AUTO
PAL
J401
VIDEO
OUT
C418
C425
(YEL)
(BLK)
CN105
IC104
DIGITAL
OUT
IC104
C402
D LED C.B
PIN105
LED
104
LED103
LED
102
LED101
FC401
C T-T C.B
CN
401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE
MOTOR)
M

SCHEMATIC DIAGRAM-9 (V5: MAIN VCD 1/2)


A MAIN VCD C.B (1/2)
IC104 GP1F32T
DIGITAL OUT (OPTICAL)
PD UNIT
CON101
FROM D CD MECHA C.B CON102
SPDI
ILSW
GND
5V
GND
RF
FOK
SENS
C.OUT
DATA
XLT
CLK
IC101 CXD2500BQ
DIGITAL SIGNAL PROCESSOR
Q102, 103 +5V REG.
Q102 2SC2712GR
Q103 2SA1362
IC102 PQ05RF11 +5V REG.
Q601, 602 +6V REG.
Q601 2SA1296 GR
Q602 2SC1815 GR
D601 1SS184
TO A MAIN VCD C.B (2/2)
6V
VCD5V
VCDGND
CON102
FROM MAIN UNIT
N.C
I/OBUSY
O-SD
N.C
O-CD.LED
O-CLK
I-SD
I-SW
O-CLOSE
O-OPEN
O-DISH.F
O-DISH.R
I-DISH.S
(NT/PAL)
S201 (TV MODE)
NTSC
PALAUTO
PAL
S101 SPPB61
S102 SPPB61
Q105 DTC124XK
IC103 LB1644
M201 TRAY (LOADING) MOTOR
CON103
FROM MAIN UNIT
VM (+12V)
D-GND
CDON
R-CH
A-GND
L-CH
FROM A MAIN VCR C.B (2/2)
Q104 DTC124XK LED DRIVER
CON105
PIN105
LED104 LED103 LED102 LED101
(FLASH WINDOW ILLUMINATION)
LED101, 104 SLP636C-81-5-T1
LED102, 103 SEL1550CM
D LED C.B
CON106
CON401
M401 TURN TABLE MOTOR
PS401 GP1S53V
C T-T C.B
IC201 MB89627
8BIT MICRO COMPUTER
X201 8.0MHz
IC202 PST600D RESET
IC203 SN74LV373NS
LATCH ADDRESS
IC204 BR6265BF-N10SL
8KB RAM
IC205 SN74LV00NS
IC206 SN74LV04NS
IC207 SN74LV32NS
IC205-207 ADDRESS DECODER
EXCK
SBSO
SCOR
WFCK
EMPH
DAXCLK
C2PO
BCK
DATA
LRCK
XCLK
A MUTE
ENCRST
VCD/CDD
XNTSC
PAL/PAL60
XVCDRST
INTRPT
XDS
XWRITE
XDTACK
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
HSEL0
HSEL1
HSEL2
VCD 5V
VCD GND
TO/FROM A MAIN VCD C.B (2/2)
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO

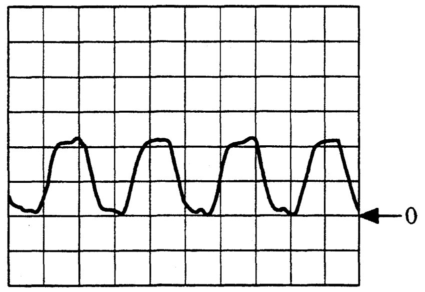
SCHEMATIC DIAGRAM-10 (V5: MAIN VCD 2/2)



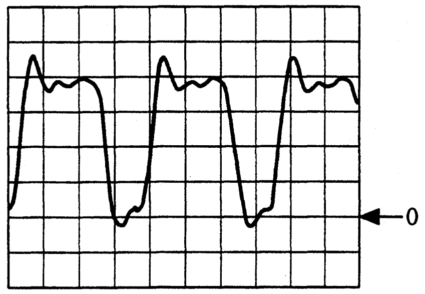
A MAIN VCD C.B (2/2)
AMUTE
IC304 PQ20VZ5U +5V REG.
6V
VCD5V
VCDGND
VCD/CDG
XNTSC
PAL/PAL60
ENCRST
TO/FROM A MAIN VCD C.B (1/2)
Q401 DTC124XK INV.
IC402 BU2173F CLOCK GENERATOR
X401 13.5M 50PPM
IC401 BU1417AK DIGITAL RGB TO NTSC/PAL ENCODER
Q402 2SC2712GR LPF SWITCH
Q403 DTC124XK INVERTER
J401 VIDEO OUT
D/A CONVERTER
IC501 SM5877AM
X501 16.9344MHz
D501 1SS184
Q502 DTA123JK MUTE SW
Q501 HN1C03FB MUTE
R-CH
AGND
L-CH
TO A MAIN VCD C.B (1/2)
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
XCLK
CLK
IC301 CL484 MPEG DECODER
IC302 HM514260 4M BIT DRAM
IC303 LH5317 64KB ROM
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XDS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
+5V
VCD +5V
VCD 5V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVE FROM NO.

WAVE FORM

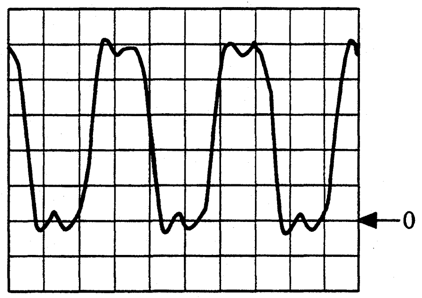
①
IC301 Pin ⑲ (GCK) VOLT/DIV: 1V
40.5MHz TIME/DIV: 10nS
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO



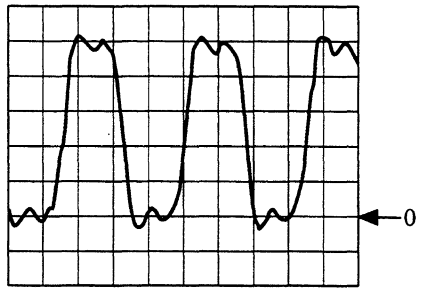
②
IC301 Pin (99) (VCLK) VOLT/DIV: 1V
27MHz±1350Hz TIME/DIV: 10nS
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO



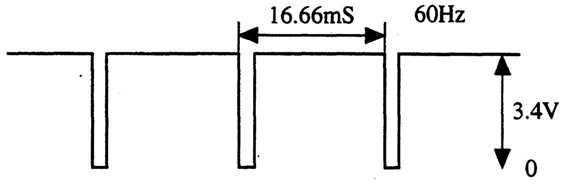
28.375MHz VOLT/DIV: 1V
CDG PLAY TIME/DIV: 10nS
TV MODE: • PAL
• PAL AUTO



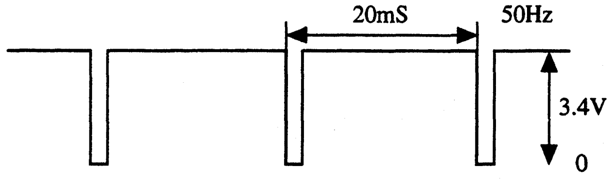
28.6363MHz VOLT/DIV: 1V
CDG PLAY TIME/DIV: 10nS
TV MODE: • NTSC



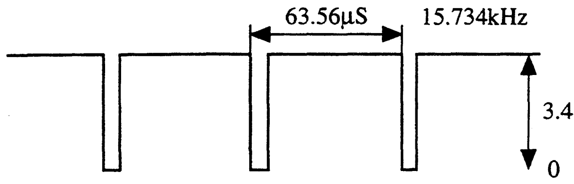
③
IC301 Pin (95) (V SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


16.66mS
60Hz
3.4V
0

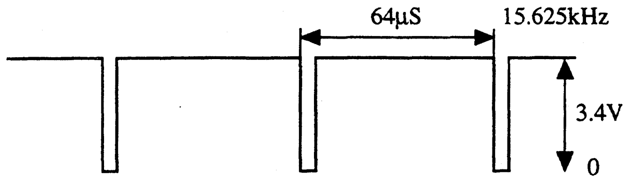
VCD, CDG PLAY
TV MODE: PAL


20mS
50Hz
3.4V
0

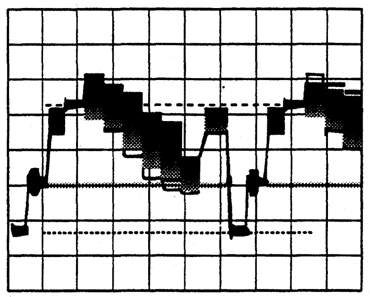
④
IC301 Pin (96) (H SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


63.56µS
15.734kHz
3.4V
0

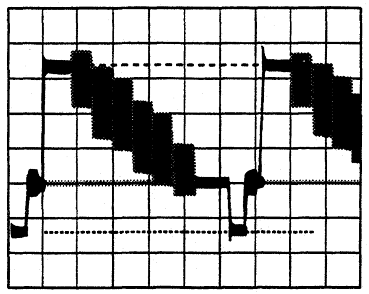
VCD, CDG PLAY
TV MODE: PAL


64µS
15.625kHz
3.4V
0

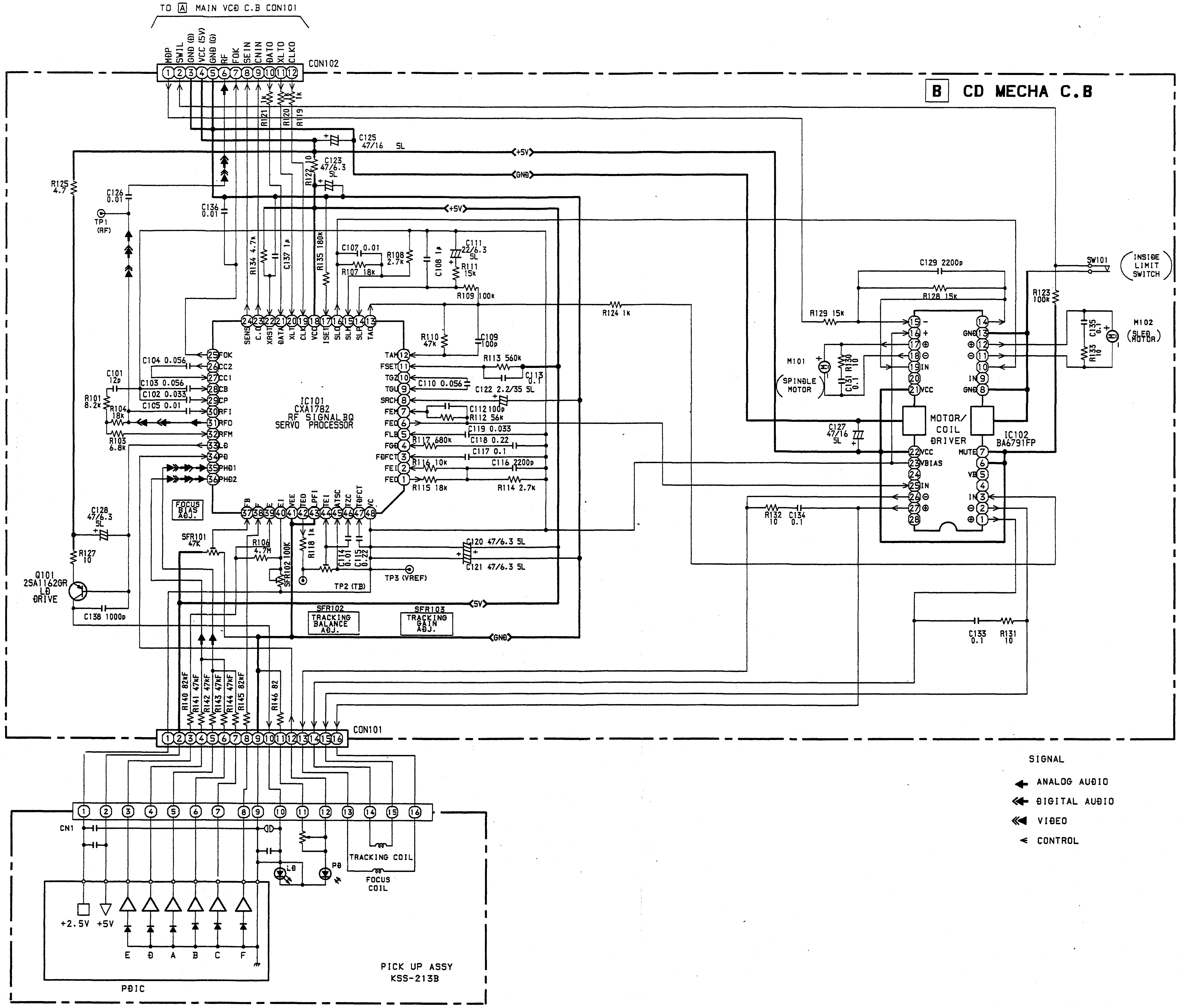
⑤
VIDEO OUT VOLT/DIV: 200mV
C407 ⊖ side TIME/DIV: 10µS
CDG PLAY: CD-T03 TRACK2
TV MODE:• NTSC



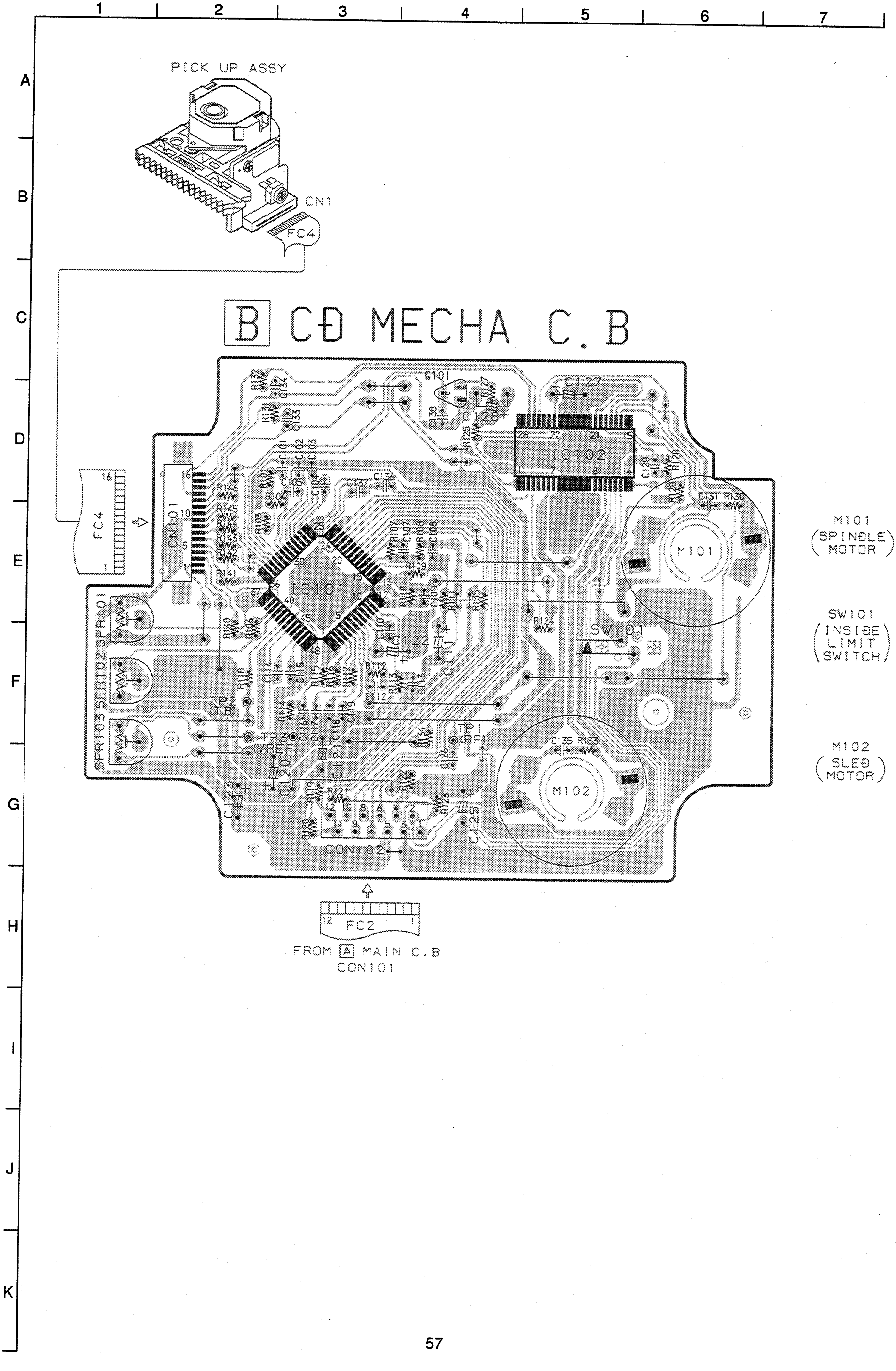
VCD PLAY: CD-T05 TRACK4 VOLT/DIV: 200mV
TV MODE:• NTSC TIME/DIV: 10µS



SCHEMATIC DIAGRAM-11 (V5: CD MECHA)


TO A MAIN VCD C.B CON101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
R121 1k
R120 1k
R119 1k
C125 47/16 5L
C123 47/6.3 5L
R122 10
+5V
GND
R125 4.7
C126 0.01
C136 0.01
TP1 (RF)
R134 4.7k
C137 1p
R135 180k
C107 0.01
R108 2.7k
R107 18k
C108 1p
C111 22/6.3 5L
R111 15k
R109 100k
R124 1k
C129 2200p
R128 15k
R129 15k
R123 100k
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101
SPINDLE MOTOR
R130 10
C131 0.1
SENS
C.OUT
XRST
DATA
XLT
CLK
VCO
ISET
SLO
SL-
SL+
TAO
TAM
FSET
TGZ
TGU
SRCH
FEM
FEO
FLB
FGD
FOFCT
FEI
FEO
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
R117 680k
C118 0.22
C117 0.1
R116 10k
C116 2200p
R115 18k
R114 2.7k
FOK
CC2
CC1
CB
CP
RFI
RFO
RFM
LD
PD
PHD1
PHD2
C104 0.056
C103 0.056
C102 0.033
C105 0.01
C101 12p
R101 8.2k
R104 18k
R103 6.8k
IC101 CXA1782 RF SIGNAL BQ SERVO PROCESSOR
FB
FE
TE
VEE
TEO
LPFI
TEI
ATSC
TZC
TDFCT
VC
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
TP3 (VREF)
TP2 (TB)
C120 47/6.3 5L
C121 47/6.3 5L
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
5V
GND
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6791FP
GND
VCC
BIAS
IN
MUTE
VB
IN
R132 10
C134 0.1
C133 0.1
R131 10
R140 82kF
R141 47kF
R142 47kF
R143 47kF
R144 47kF
R145 82kF
R146 82
CON101
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY KSS-213B

WIRING-7 (V5: CD MECHA)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J
K
PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
Q101
C127
C128
SW101
M101
M102
SFR101
SFR102
SFR103
TP1 (RF)
TP2 (TB)
TP3 (VREF)
CON102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
FC2
FROM A MAIN C.B CON101

IC DESCRIPTION

IC, CXD2500BQ

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter selection output.
3	MON	O	Spindle motor ON-OFF control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	Spindle motor servo control.
6	LOCK	O	H output when GFS is sampled at 460 Hz and GFS is H. L output when L is continuously 8 times.
7	NC	—	Not used.
8	VCOO	O	Oscillator circuit output for analog EFM PLL.
9	VCOI	I	Oscillator circuit input for analog EFM PLL. fLOCK = 8.6436 MHz.
10	TEST	I	TEST terminal. Normally GND.
11	PDO	O	Charge pump output for analog EFM PLL.
12	VSS	—	GND.
13	NC	—	Not used.
14	NC	—	Not used.
15	NC	—	Not used.
16	VPCO	O	Charge pump output for vari-pitch PLL.
17	VCKI	I	Clock input from external VCO for vari-pitch. fc center = 16.9344 MHz.
18	FILO	O	Filter output for master PLL (slave = digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for
21	AVSS	—	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	—	Analog power supply. (+3.5 V)
24	RF	I	EFM signal input.
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry comparate voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD.)
28	ASYE	I	L: asymmetry circuit OFF, H: asymmetry circuit ON.
29	NC	—	Not used.
30	PSSL	I	Audio data output mode selection input. Serial output at L, parallel output at H.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.
33	VDD		Power supply. (+3.5 V)
34	S DATA	O	DA16 (MSB) output when PSSL = H. 48-bit slot serial data when PSSL = L. (2's COMP, MSB first).
35	BCLK	O	DA15 output when PSSL = H. 48-bit slot bit clock when PSSL = L.
36	NC	O	DA14 output when PSSL = H. 64-bit slot serial data when PSSL = L. (2's COMP, MSB first).
37	NC	O	DA13 output when PSSL = H. 64-bit slot bit clock when PSSL = L.
38	NC	O	DA12 output when PSSL = H. 64-bit slot LR clock when PSSL = L.

Pin No.	Pin Name	I/O	Description
39	GTOP	O	DA11 output when PSSL = H. GTOP output when PSSL = L.
40	XUGF	O	DA10 output when PSSL = H. XUGF output when PSSL = L.
41	XPLCK	O	DA09 output when PSSL = H. XPLCK output when PSSL = L.
42	GFS	O	DA08 output when PSSL = H. GFS output when PSSL = L.
43	RFCK	O	DA07 output when PSSL = H. RFCK output when PSSL = L.
44	C2PO	O	DA06 output when PSSL = H. C2P0 output when PSSL = L.
45	XRAOF	O	DA05 output when PSSL = H. XRAOFoutput when PSSL = L.
46	MNT3	O	DA04 output when PSSL = H. MNT3 output when PSSL = L.
47	MNT2	O	DA03 output when PSSL = H. MNT2 output when PSSL = L.
48	MNT1	O	DA02 output when PSSL = H. MNT1 output when PSSL = L.
49	MNT0	O	DA01 output when PSSL = H. MNT0 output when PSSL = L.
50	APTR	O	Aperture correction control output. H when R channel.
51	APTL	O	Aperture correction control output. H when L channel.
52	VSS	—	GND.
53	XTAI	I	Input to 16.9344 MHz X'tal oscillator circuit. or 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal oscillator output.
55	XTSL	I	X'tal selection input. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 divider output of the pins 53 and 54. Does not change with vari-pitch.
57	C4M	O	4.2336 MHz output. When vari-pitch is performed, it changes too.
58	C16M	O	16.2336 MHz output. When vari-pitch is performed, it changes too.
59	MD2	I	Digital-out ON/OFF control. ON at H, OFF at L.
60	DOUT	O	Digital-out terminal.
61	EMPH	O	H output when the playback disc has emphasis. L output without emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	H output when S0 or S1 of the subcode sync is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	SubQ 8-bit and PCM peak level data. 16-bit output.
67	SQCK	I	Clock input for SQSO readout.
68	MUTE	I	Mute at H. Release at L.
69	SENS	O	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at fall-down edge.
73	VDD	—	Power supply (+3.5 V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Sensor input from SSP.
76	CNIN	I	Track jump number counted signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches at fall-down edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of 128 track or more at auto sequencer.

IC, µPD78044BGF

Pin No.	Pin Name	I/O	Description
1	DO ON	O	Digital output. ON/OFF output.
2~7	NC	—	Not used.
8	VDD	—	PWR. +5 V power supply.
9	CM CLK	I/O	Serial clock I/O.
10	C DATA	O	Serial data output.
11	M DATA	I	Serial data input.
12	O-CLK	O	DSP serial clock output.
13	O-XLT	O	DSP serial latch output.
14	O-SQCLK	O	DSP sub Q read-out clock output.
15	O-DATA	O	DSP serial data output.
16	I-SQDATA	I	DSP sub Q data input.
17	$\overline{\text{RESET}}$	I	System reset input.
18	I-SENS	I	DSP SENS input.
19	XRST	O	CD system reset output.
20	AVSS	—	PWR. GND potential of A/D converter input.
21	I-FOK	I	ASP FOK input.
22	I-GFS	I	DSP GFS input.
23	—	—	Connected GND.
24	I-ILSW	I	Pickup limit switch input.
25	I-OCSW	I	Tray OPEN/CLOSE switch input.
26~28	—	—	Connected GND.
29	AVDD	—	PWR. Analog power supply of A/D converter input.
30	AVREF	I	PWR. Reference voltage input of A/D converter input.
31	—	—	Connected GND.
32	NC	—	Open terminal.
33	VSS	—	PWR. GND potential.
34	X1	I	CLK. Terminal for 4.19 MHz clock oscillator.
35	X2	O	CLK. Terminal for 4.19 MHz clock oscillator.
36~38	NC	—	Not used.
39	$\overline{\text{C-BUSY}}$	O	MPEG status output.
40	MSTBY	I	Main microprocessor status input.
41	CLOCK	O	Main microprocessor serial clock output.
42	DATA	O	Main microprocessor serial data output.
43	D-REQ	O	Main microprocessor status output.
44	I-KEY	I	Main microprocessor serial data input.
45	SCOR	I	DSP SCOR input.
46	$\overline{\text{M-BUSY}}$	I	MPEG status signal input.
47	—	—	Connected GND.
48	IC	—	PWR. Connected to Vss.
49	MUTE L	O	L channel analog mute output.
50	MUTE R	O	R channel analog mute output.

Pin No.	Pin Name	I/O	Description
51	DSENS	I	Turntable sensor input.
52	VDD	—	PWR. +5 V power supply.
53~64	NC	—	Not used.
65	O-TOPN	O	Tray OPEN output.
66	O-CLS	O	Tray CLOSE output.
67	O-DFWD	O	Turntable forward rotation output.
68	O-DRVS	O	Turntable reverse rotation output.
69, 70	NC	—	Not used.
71	VLOAD	—	PWR. -27 V power supply for FL pull-down.
72~76	NC	—	Not used.
77	VCD	O	VIDEO CD selection output.
78	$\overline{\text{CD FUNC}}$	O	CD function selection output.
79	G-MUT	O	CDG mute output.
80	CD ON	O	FL. Digit output for FL display.

IC, LC7872E

Pin No.	Pin name	I/O	Description
1, 2	S1, S2	—	DSP select pin for CD. (Connected to VDD)
3	SBCK	O	Subcode read/write clock.
4	SFSY	I	Subcode frame sync signal.
5	PW	I	Subcode read/write data.
6	SBSY	I	Subcode block sync signal.
7	VDD1	—	Power supply for digital block. (Connected to +5V)
8	CE	I	Control pin when serial input or serial output. (Connected to GND)
9	DO	O	Serial data output. (Connected to GND)
10	DI	I	Serial data input. (Connected to GND)
11	CL	I	Clock when inputting/outputting serial data. (Connected to GND)
12	MUTE	I	Control signal disabling the subcode.
13	VSS1	—	GND for digital block.
14	$\overline{\text{WE}}$	O	DRAM control pin.
15	$\overline{\text{RAS}}$	O	DRAM control pin.
16~23	A0~A7	O	DRAM address pin.
24	DB0	I/O	DRAM data pin.
25	$\overline{\text{CAS}}$	O	DRAM control pin.
26	DB1	I/O	DRAM data pin.
27	$\overline{\text{DE}}$	O	DRAM control pin.
28	DB2	I/O	DRAM data pin.
29	DB3	I/O	DRAM data pin.
30	CE	I	"L": Normal mode "H": Color bar output (Not used)
31	CDGM	O	"H" output when CDG disk. (Not used)
32	TRANS0	O	Transparency digital output. (Not used)
33	TRANS1	O	Transparency digital output. (Not used)
34	TRANS2	O	Transparency digital output. (Not used)
35	TRANS3	O	Transparency digital output. (Not used)
36	TRANS4	O	Transparency digital output. (Not used)
37	TRANS5	O	Transparency digital output. (Not used)
38	VSS2	—	Composite video DAC GND pin.
39	VDD2	—	Composite video DAC power supply pin. (Connected to +5V)
40	BIAS	O	Capacitor connecting pin for eliminating ripple.
41	VIDEO	O	Composite video output pin (8-bit DAC output).
42	TEST	I	Test pin. Set to "L" normally. (Connected to GND)
43	LINE	I	When NP2 pin is "H": H: 263H L: 262H When NP2 pin is "L": H: 312H L: 314H (Not used)
44	FSCIN	I	Subcarrier clock input pin. (feedback resistor is built in) (Connected to GND)
45	VSYNC	O	Vertical sync signal output pin. (Not used)
46	TEST1	I	Test pin. Set to "L" normally. (Connected to GND)
47	YS	O	Superimpose control output. (Not used)
48	$\overline{\text{CSTNC}}$	O	Composite sync signal output. (Not used)

Pin No.	Pin name	I/O	Description
49	GND	—	GND.
50	EFLG	O	Error status monitor pin. (Not used)
51	FSX	O	For error status monitor trigger. (Not used)
52	DEN	I	Disk information display enable. H: BGC L: Enable (Connected to GND)
53	PALID	I	External control pin when superimposing with PAL (pull-up resistor is built in). (Not used)
54	VDD3	—	Digital power supply (+5V)
55	FSC	O	Subcarrier clock output. NTSC mode: 3.579545 MHz PAL mode: 4.433619 MHz (Not used)
56	VDD4	—	Digital power supply (+5V)
57	$\overline{\text{RESET}}$	I	Reset input pin.
58	N/$\overline{\text{P}}$1	I	NTSC/PAL selection pin. (RGB encoder) "H": NTSC "L": PAL
59	N/$\overline{\text{P}}$2	I	NTSC/PAL selection pin. (CD-G decoder) "H": NTSC "L": PAL
60	SON	I	Superimpose ON/OFF pin. (Connected to GND)
61	XIN2	I	Crystal oscillator 17.734476 MHz. (for PAL)
62	XOUT2	O	Crystal oscillator 17.734476 MHz. (for PAL)
63	XIN1	I	Crystal oscillator connection 14.31818 MHz. (for NTSC)
64	XOUT1	O	Crystal oscillator connection 14.31818 MHz. (for NTSC)

IC, CXA1782BQ

Pin No.	Pin name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	—	+ 5 V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU .
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU .
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (Eye pattern check point)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35~36	PHD1~2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE BIAS	I	Bias adjustment pin of the focus error amplifier.
38~39	F~E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	—	Gain adjustment pin of the I-V amplifier E.
41	VEE	—	GND connection pin
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, CL480

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS		GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3		Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	RESERVED	—	Reserved.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	RESERVED	—	Reserved.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	RESERVED	—	Reserved.
121	-FMV_DET	O	FMV detection. L: FMV detected.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	RESERVED	—	Reserved.
125	VSS	—	GND.
126	RESERVED	—	Reserved.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, CXD1178Q

Pin No.	Pin Name	I/O	Description
1~8	R0~R7	I	Digital input.
9~16	G0~G7		
17~24	B0~B7		
25	BLK	I	Blanking pin. No signal at "H" (Output 0V). Output condition at "L".
26	$\overline{CE}$	I	Chip enable pin. No signal (Output 0V) at "H" and minimizes power consumption.
27	RCK	I	Clock pin. Moreover all input pins are TTL-CMOS compatible.
28	GCK		
29	BCK		
30, 31	DVSS	—	Digital GND.
32	VB	O	Connect a capacitor of about 0.1μF.
33	AVSS	—	Analog GND.
34	VREF	I	Set full scale output value.
35	IREF	I	Connect a resistance 16 times "16R" that of output resistance value "R".
36	$\overline{RO}$	O	Inverted current output pin. Normally dropped to analog GND.
37	RO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
38	$\overline{GO}$	O	Inverted current output pin. Normally dropped to analog GND.
39	GO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
40	$\overline{BO}$	O	Inverted current output pin. Normally dropped to analog GND.
41	BO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
42	VG	I	Connect a capacitor of about 0.1μF.
43~46	AVDD	—	Analog VDD.
47, 48	DVDD	—	Digital VDD.

IC, MC68HC705

Pin No.	Pin Name	I/O	Description
1	RST	I	Reset.
2	IRQ	I	MPEG DECODER request signal.
3	VPP	—	ROM write power.
4~11	PA7~PA0	I/O	MPEG DECODER data bus 7~0.
12~14	PB0~PB2	O	MPEG DECODER register select 0~2.
15	PB3	O	MPEG DECODER data R/W select.
16	PB4	O	MPEG DECODER data strobe.
17	PB5	I	MPEG DECODER data acknowledge.
18	PB6	I	CD-I bit stream detect.
19	PB7	I	CD DA/VCO select.
20	VSS	—	Power ground.
21	PC7	I	MPEG DECODER FIFO status.
22, 23	PC6, PC5	—	Not used.
24	PC4	O	MPEG DECODER reset signal.
25, 26	PC3, PC2	—	Not used.
27, 28	PC1, PC0	O	Key scan out 1, 0.
29	RDI	—	Not used.
30	$TD\overline{O}$		
31~34	PD2~PD5	I	Key scan input 0~3.
35	TCMP	O	Remote data out.
36	PD7	—	Not used.
37	CAP	I	Remote data in.
38, 39	OSC2, OSC1	I	X_tal in.
40	VDD	—	Power 5V.

IC, µPD6376

Pin No.	Pin Name	I/O	Description
1	FS-SEL	I	As this terminal is "Low" or open, L-ch data and R-ch data are inputted for serial data by the pin 15. As this terminal is "High", L-ch data is inputted by the pin 15, R-ch data is inputted by the pin 14. (Pull-downed by the 100 kΩ resistance in IC.)
2	D. GND	—	Ground terminal for the logic circuit.
3	NC	—	—
4	D. VDD	—	Power supply terminal for the logic circuit .
5	A. GND	—	Ground terminal for the analog circuit.
6	R. OUT	O	Output terminal for the right analog signal.
7, 8	A. VDD	—	Power supply terminal for the analog circuit.
9, 10	R. REF, L. REF	—	Operational Amplifier reference bias terminal. Normally connected to A.GND via a capacitor.
11	L. OUT	O	Output terminal for the left analog signal.
12	A. GND	—	Ground terminal for the analog circuit.
13	LRCK	I	As the pin 1 is "Low" or open, this is input terminal for left/right identification signal. As the pin 1 is "High", this is input terminal for word identification signal of input data.
14	LRSEL	I	As the pin 1 is "Low" or open, this is left/right selection terminal for LRCK signal. At "High" of LRCK signal, set LRSEL pin at "Low" for L-ch DATA input. At "Low" of LRCK signal, set LRSEL pin at "High" for L-ch DATA input. As the pin 1 is "High", this is input terminal for R-ch serial data.
15	DATA	I	As the pin 1 is "Low" or open, this is input terminal for L-ch and R-ch serial data. As the pin 1 is "High", this is input terminal for L-ch serial data.
16	BCK	I	Input terminal for read clock of serial input data.

IC, CXA1645M

Pin No.	Pin Name	I/O	Description
1	GND	—	GND.
2	RIN	I	Analog RGB input terminals.
3	GIN		
4	BIN		
5	NC	—	N. C.
6	SCIN	I	Subcarrier input terminal.
7	NPIN	I	NTSC, PAL mode select terminal. NTSC: Vcc, PAL: GND.
8	BFOUT	O	Output terminal to monitor the BF pulse. Unable to drive 75 Ω load.
9	YCLPC	—	External time constant for Y signal clamp is connected to this terminal.
10	SYNCIN	I	Composite sync signal input terminal. Input at TTL level. SYNC period at L (≦ 0.8 V). H (≧ 2.0 V).
11	NC	—	N. C.
12	VCC	—	Power supply terminal.
13	IREF		Terminal which determines internal reference current.
14	VREF	—	Internal reference voltage terminal.
15	COUT	O	Chroma signal output terminal.
16	YOUT	O	Y signal output terminal.
17	YTRAP	I	Terminal to reduce cross-color due to subcarrier frequency component included in the Y signal.
18	FO	I	fo adjustment terminal of internal filter. The following resistor is connected between GND depending upon NTSC or PAL mode. NTSC: 20 kΩ (±1%) PAL: 16 kΩ (±1%).
19	VCC	—	Power supply terminal.
20	CVOUT	O	Composite video signal output terminal.
21	BOUT	O	Analog RGB signal output terminal
22	GOUT		
23	ROUT		
24	GND	—	GND.

IC, HD6433042F06F

Pin No.	Pin Name	I/O	Description
1	VCC	I	Power supply.
2	CDG DIN	O	CD-G decoder serial data signal.
3	CDG XLT	O	CD-G decoder latch signal.
4	CDG CLK	O	CD-G decoder clock signal.
5~7	GADSP0~2	O	Gate array DSP format 0~2.
8	$\overline{\text{DRQ CDDEC}}$	I	CD-ROM decoder data request signal.
9	$\overline{\text{DRQ MPEG}}$	I	MPEG decoder data request signal.
10	$\overline{\text{RESO}}$	O	External reset output.
11	GND	I	GND.
12	TXD0	O	Serial interface (RXD).
13	TXD1	O	CXD for test.
14	RXD0	I	Serial interface (RXD).
15	RXD1	I	RXD for test.
16	SCK0	I/O	Serial interface (SCK).
17	$\overline{\text{MPRST}}$	O	Peripheral reset. L: RESET ON.
18~21	D0~D3	I/O	Data bus 0~3.
22	GND	I	GND.
23~34	D4~D15	I/O	Data bus 4~15.
35	VCC	I	Power supply.
36~43	A0~A7	O	Address bus 0~7.
44	GND	I	GND.
45~56	A8~A19	O	Address bus 8~19.
57	GND	I	GND.
58	$\overline{\text{WAIT}}$	I	External wait signal.
59	GLUE ON	O	DMA glue circuit enable 0: OFF. 1: ON.
60	M EMPH	O	MPEG AUDIO emphasis 0: OFF. 1: ON.
61	FAI	O	System clock output.
62	$\overline{\text{STBY}}$	I	Standby. (Hardware standby mode at low level).
63	$\overline{\text{RES}}$	I	Reset input. (Reset at low).
64	NMI	I	Non-maskable interrupt. (Non-maskable interrupt is requested).
65	GND	I	GND.
66	EXTAL	I	External crystal is connected to this pin.
67	XTAL	I	External crystal is connected to this pin.
68	VCC	I	Power supply.
69	$\overline{\text{AS}}$	O	Address strobe signal.
70	$\overline{\text{RD}}$	O	External address read enable signal.
71	$\overline{\text{HWR}}$	O	External address high write enable signal.
72	$\overline{\text{LWR}}$	O	External address low write enable signal.
73~75	MOD0~MOD2	I	Mode terminal. Operating mode is set using this terminal.
76	AVCC	I	Power supply terminal of A/D converter and D/A converter.
77	VREF	I	Reference voltage input to A/D converter and D/A converter.

Pin No.	Pin Name	I/O	Description
78, 79	P70, P71	I	IN port 0, 1 for test.
80	PAL/$\overline{\text{NTSC}}$	I	PAL/NTSC status 0: NTSC. 1: PAL.
81	$\overline{\text{REQ CD}}$	I	Serial interface (REQ_CD).
82~85	P74~P77	I	Reserve.
86	AGND	I	GND terminal of A/D converter and D/A converter.
87	$\overline{\text{INT CDDRV}}$	I	Serial interface interrupt.
88	$\overline{\text{INT CDDEC}}$	I	CD-ROM decoder interrupt.
89	$\overline{\text{INT MPEG}}$	I	MPEG decoder interrupt.
90	$\overline{\text{IRQ3}}$	I	Reserve.
91	P84	I	Reserve.
92	GND	I	GND.
93	$\overline{\text{DONE CDDEC}}$	O	CD-ROM decoder DONE signal.
94	$\overline{\text{DONE MPEG}}$	O	MPEG decoder DONE signal.
95	CDG VOFF	O	CD-G decoder video OFF signal. 1: VOFF.
96	SYS MUTE1	O	Audio mute 1 signal. 1: mute ON.
97	INTFLDO	I	EVEN/OFF input signal. 0: EVEN. 1: 0DD.
98	SW AUDIO	O	Audio select signal. 0: CD-G/DA. 1: MPEG.
99	$\overline{\text{SYS MUTE0}}$	O	Audio mute 0 signal. 0: mute on.
100	$\overline{\text{REQ MPEG}}$	O	Serial interface (REQ MPEG)

IC, µPD65622GF-239-3B9

Pin No.	Pin Name	I/O	Description
1	LRCKCD	O	Main data signal to CXD1186.
2	SDATACD	O	
3	BCKCD	O	
4	C2POCD	O	
5	$\overline{\text{CSROMH}}$	O	Chip select signal to CXD1186 (host side).
6	$\overline{\text{CSROMC}}$	O	Chip select signal to CXD1186 (CPU side).
7	$\overline{\text{DACKROM}}$	O	DMA acknowledge signal to CXD1186.
8	HDRQ	I	Data transfer request signal from CXD1186. This signal is active high.
9	$\overline{\text{ROMRD}}$	O	Read/write signal to CXD1186.
10	$\overline{\text{ROMWR}}$	O	Read/write signal to CXD1186.
11	EMPHI	I	This signal allows inputting the main data from the CD drive.
12	GND	—	GND.
13	SDATAI	I	This signal allows inputting the main data from the CD drive.
14	BCKI	I	
15	LRCKI	I	
16	C2POI	I	
17	GND	—	GND.
18	16.9M	I	16.9344 MHz oscillator circuit input signal.
19	16.9F	O	16.9344 MHz oscillator circuit output signal.
20	GND	—	GND.
21	GSFSY	I	Write frame clock signal used to input the sub data from CD drive.
22	EMPO	O	Main data signal to CXD1186.
23	LRCKO	O	Audio data signal to audio DAC.
24	SDATAO	O	Audio data signal to audio DAC.
25	RESET	O	Active high reset signal.
26	GND	—	GND.
27	BCKCO	O	Audio data signal to audio DAC.
28	$\overline{\text{GGLUE}}$	I	The input signal which makes the glue circuit valid from GSFSY input.
29	$\overline{\text{GGSFSY}}$	O	Not used.
30	SDATAMA	I	Audio data signal from µPD61010.
31	BCKMA	I	
32	LRCKMA	I	
33	GND	—	GND.
34	VCC	—	Vcc.
35	$\overline{\text{16.9M}}$	O	16.9344 MHz output signal.
36	GND	—	GND.
37	$\overline{\text{DS}}$	O	Control signal to µPD61010.
38	$\overline{\text{CSMPEG}}$	O	Chip select signal to CXD1186.
39	$\overline{\text{R/W}}$	O	Control signal to µPD61010.
40	INT	I	Interrupt request signal from µPD61010. This signal is active high.
41	$\overline{\text{HDAK}}$	I	Data acknowledge signal from µPD61010.

Pin No.	Pin Name	I/O	Description
42	$\overline{\text{DREQ}}$	I	DRAM data transfer request signal from µPD61010.
43	$\overline{\text{DACKMP}}$	O	DMA acknowledge signal to µPD61010.
44	$\overline{\text{DAK}}$	I	Bit stream data transfer request signal from µPD61010.
45	$\overline{\text{CSCELL}}$	O	Chip select signal to standard cell.
46	GND	—	GND.
47	$\overline{\text{RESET}}$	I	System reset signal.
48	GND	—	GND.
49	$\overline{\text{CSRAM}}$	O	Chip select signal to the system RAM.
50	$\overline{\text{LWR}}$	I	Lower data write signal from CPU.
51	$\overline{\text{HWR}}$	I	Upper data write signal from CPU.
52	$\overline{\text{RD}}$	I	Data read signal from CPU.
53	GND	—	GND.
54	$\overline{\text{AS}}$	I	Address strobe signal from CPU.
55	$\overline{\text{CSIO}}$	O	Optional chip select signal.
56~63	A19~A12	I	Address signal from CPU.
64	GND	—	GND.
65	$\overline{\text{WAIT}}$	O	Wait signal to CPU.
66	GLUEON	I	This signal makes the glue logic valid in order to prevent CPU DMAC from trouble. This circuit is made valid at high.
67	$\overline{\text{SEL12}}$	I	Input signal to select 12 MHz or 16 MHz CPU clock.
68	EMPMA	I	Audio data signal from µPD61010.
69	GND	—	GND.
70	FAI	I	Basic clock signal (12 MHz) from CPU.
71	GND	—	GND.
72	VCC	—	Vcc.
73	GND	—	GND.
74	$\overline{\text{INTMPEG}}$	O	Interrupt request signal to CXD1186.
75	SWAUDIO	I	Selection signal between MPEG audio and CD-DA audio signals.
76	$\overline{\text{DRQ1}}$	O	DMA transfer request signal to µPD61010.
77	$\overline{\text{DRQ0}}$	O	DMA transfer request signal to CXD1186.
78~80	GADSP2~0	I	Format select signal to convert format of the main data from CD drive.

IC, CXD1186CR

Pin No.	Pin Name	I/O	Description
1~4	A0~A3	I	CPU address signal.
5	HMDS	I	Host mode select signal.
6, 7	HA0, HA1	I	Host address signal.
8	XHCS	I	Chip select negative logic signal from the host.
9	HINT	O	Interrupt request negative logic signal to the host.
10	GND	—	GND.
11	XHRD	I/O	Data read strobe signal from the host or to the SCSI control IC.
12	XHWR	I/O	Data write strobe signal from the host or to the SCSI control IC.
13~20	HDB0~HDB7	I/O	Host data bus.
21	GND	—	GND.
22	HDBP	I/O	Error flag. Host data bus.
23	XRST	I	Reset negative logic signal.
24	HDRQ	O	Data request positive logic signal to the host. Or DMA acknowledge negative logic signal to the SCSI control IC.
25	XHAC	I	DMA acknowledge negative logic signal from the host Or data request positive logic signal from the SCSI control.
26	XTC	I	Terminal count negative logic signal.
27	ADRQ	I	DMA request positive logic signal from ADP.
28	XAAC	O	DMA acknowledge negative logic signal to ADP.
29, 30	BA0, BA1	O	Buffer memory address.
31	VDD	—	Power supply (+5 V) terminal.
32~39	BA2~BA9	O	Buffer memory address.
40	GND	—	GND.
41~46	BA10~BA15	O	Buffer memory address.
47	XMOE	O	Buffer memory output enable negative logic signal.
48	XMWR	O	Buffer memory write negative logic signal.
49	BDB0	I/O	Buffer memory data bus.
50	GND	—	GND.
51~57	BDB1~BDB7	I/O	Buffer memory data bus.
58	BDBP	I/O	Buffer memory pointer data bus.
59	XTL2	O	X'TAL oscillator circuit output terminal.
60	XTL1	I	X'TAL oscillator input terminal.
61	GND	—	GND.
62	HCLK	O	X'TAL 1 divided-by-2 clock signal.
63	LRCK	I	LR clock from CD player.
64	DATA	I	Serial data from CD player.
65	BCLK	I	Bit clock from CD player.
66	C2P0	I	C2 pointer from CD player.
67~70	DB0~DB3	I/O	CPU data bus.
71	VDD	—	Power supply (+5 V) terminal.
72~75	DB4~DB7	I/O	CPU data bus.

Pin No.	Pin Name	I/O	Description
76	XCS	I	Chip select negative logic signal from CPU.
77	XRD	I	IC internal register read-out strobe negative logic signal from CPU.
78	XWR	I	IC internal register write strobe negative logic signal from CPU.
79	INT	O	Interrupt request signal to CPU.
80	GND	—	GND.

IC, TLC29321PW

Pin No.	Pin Name	I/O	Description
1	VDD	—	Power supply terminal to the internal logic circuit.
2	VCO LS	I	VCO output frequency divide-by-2 divider select terminal. The VCO output frequency can be divided by 2 and output as this terminal is controlled by external logic.
3	VCOO	O	VCO output terminal. Goes to low level during inhibit.
4, 5	FIN-A, FIN-B	I	2 input terminal for edge difference detection between the reference frequency (fREF-IN) and the frequency from external counter. The fREF-IN is input to the FIN-A terminal normally, and the divided or multiplied frequency from external counter is input to the FIN-B terminal.
6	PFDO	O	PFD output terminal.
7	GND	—	Internal logic circuit GND terminal.
8	NC	—	N.C.
9	PFDIH	I	PFD inhibit function control terminal.
10	VCOIH	I	VCO inhibit function control terminal.
11	A GND	—	VCO GND.
12	VCOI	I	VCO control voltage input. The VCO oscillator control voltage is input from an external low-pass filter to form PLL.
13	RBIAS	I	External resistor is connected to this terminal for setting the VCO oscillation frequency. A bias resistor is connected between this terminal and power supply line to supply bias for internal VCO oscillation and for setting and adjusting the oscillating frequency.
14	A VDD	—	VCO power supply voltage terminal.

IC, HD49307

Pin No.	Pin No.	I/O	Description
1~5	G4~G8	I	Digital input terminal.
6	B1	—	N. C.
7	NC	I	Digital input terminal.
8~12	B2~B6	I	Digital input terminal.
13~15	NC	—	N. C.
16, 17	B7, B8	I	Digital input terminal.
18	NC	—	N. C.
19	RCLK	I	R channel clock input.
20	GCLK	I	G channel clock input.
21	BCLK	I	B channel clock input.
22	DVSS	—	Digital GND.
23	DVDD	—	Digital power supply.
24	NC	—	N. C.
25	CBU	—	External phase compensation capacitance connection terminal.
26	CBL	—	Bypass capacitance connection terminal.
27~29	NC	—	N. C.
30	VRREF	I	Reference voltage input terminal.
31	AVSS	—	Analog GND.
32	AVDD	—	Analog power supply.
33	BOUT	O	B channel analog signal output terminal.
34	AVDD	—	Analog power supply.
35	NC	—	N. C.
36	GOUT	O	G channel analog signal output terminal.
37	AVDD	—	Analog power supply.
38	ROUT	O	R channel analog signal output terminal.
39	AVSS	—	Analog GND.
40	AVDD	—	Analog power supply.
41	DVDD	—	Digital power supply.
42	R1	I	Digital input terminal.
43~44	NC	—	N. C.
45~51	R2~R8	I	Digital input terminal.
52~54	G1~G3	I	Digital input terminal.
55, 56	NC	—	N. C.

IC, µPD61010

Pin No.	Pin Name	I/O	Description
1	VDD	—	+5 V power supply.
2~6	HD9~5	I/O	Host data bus.
7	VDD	—	+5 V power supply.
8	GND	—	GND.
9~13	HD4~0	I/O	Host data bus.
14	VDD	—	+5 V power supply.
15	GND	—	GND.
16	$\overline{\text{DREQ}}$	O	DMA request signal.
17	$\overline{\text{DACK}}$	I	DMA acknowledge signal.
18	HSEL	I	Signal to select the host CPU access method.
19	DRQ	I	Data input request for bit stream input from CD-ROM decoder.
20	VDD	—	+5 V power supply.
21	GND	—	GND.
22	$\overline{\text{DAK}}$	O	Data input response for bit stream input from CD-ROM decoder, or DMA input request for code input.
23	$\overline{\text{DRD}}$	O	Bit stream input approval signal.
24, 25	NC	—	N. C.
26~33	CD0~7	I	Data bus for bit stream input from CD-ROM decoder.
34	VDD	—	+5 V power supply.
35	GND	—	GND.
36~39	MD7~4	I/O	DRAM data bus.
40	VDD	—	+5 V power supply.
41, 42	GND	—	GND.
43~46	MD3~0	I/O	DRAM data bus.
47, 48	MD15, 14	I/O	DRAM data bus.
49	VDD	—	+5 V power supply.
50	GND	—	GND.
51~56	MD13~8	I/O	DRAM data bus.
57	VDD	—	+5 V power supply.
58	GND	—	GND.
59~64	MA0~5	O	DRAM address bus.
65	VDD	—	+5 V power supply.
66	GND	—	GND.
67~69	MA6~8	O	DRAM address bus.
70	$\overline{\text{RAS 1}}$	O	DRAM RAS signal.
71	$\overline{\text{RAS 0}}$	O	DRAM RAS signal.
72	$\overline{\text{CAS}}$	O	DRAM CAS signal.
73	VDD	—	+5 V power supply.
74	$\overline{\text{WE}}$	O	Write enable to DRAM.
75~77	NC	—	N. C.
78	VOE	I	Video data output enable.

Pin No.	Pin Name	I/O	Description
79, 80	GND	—	GND.
81	VDD	—	+5 V power supply.
82	NC	—	N. C.
83	FLDI	I	Field signal (odd/even)
84	HDI	I	Horizontal sync signal.
85	VDI	I	Vertical sync signal.
86	VDCLK	I	Video data output clock (13.5 MHz).
87	VDD	—	+5 V power supply.
88~91	VDATA23~20	O	Video data output bus.
92	GND	—	GND.
93	VDD	—	+5 V power supply.
94~97	VDATA19~16	O	Video data output bus.
98, 99	VDATA15, 14	O	Video data output bus.
100	VDD	—	+5 V power supply.
101	GND	—	GND.
102~105	VDATA13~10	O	Video data output bus.
106	VDD	—	+5 V power supply.
107	GND	—	GND.
108~112	VDATA9~5	O	Video data output bus.
113	VDD	—	+5 V power supply.
114	GND	—	GND.
115~119	VDATA4~0	O	Video data output bus.
120	VDD	—	+5 V power supply.
121, 122	GND	—	GND.
123	DO	O	Video data output bus.
124	BCK	O	Video data output clock.
125	LRCK	O	L/R channel identification signal.
126	MCLK	O	Audio master clock.
127	NC	—	N. C.
128	AUCLK	I	Internal audio decoder system clock.
129	VDD	—	+5 V power supply.
130~132	NC	—	N. C.
133	VDD	—	+5 V power supply.
134	$\overline{\text{RESET}}$	I	Reset signal.
135	CLK	I	System clock (27 MHz)
136	GND	—	GND.
137	$\overline{\text{DS}}$	I	Data strobe signal.
138	R/$\overline{\text{W}}$	I	Read/write select.
139	$\overline{\text{CS}}$	I	Chip select.
140~145	HADR0~5	I	Host address bus.
146, 147	GND	—	GND.

Pin No.	Pin Name	I/O	Description
148	INT	O	Interrupt signal.
149	$\overline{\text{HDAK}}$	O	Bus cycle response signal.
150	VDD	—	+5 V power supply.
151	GND	—	GND.
152~157	HD15~10	I/O	Host data bus.
158	VDD	—	+5 V power supply.
159, 160	GND	—	GND.

IC, µPD63210GT

Pin No.	Pin Name	I/O	Description
1	TSEL	I	Test selection input.
2	RST	I	Reset input.
3	XTO	O	External crystal oscillator is connected to this pin.
4	XTI	I	External crystal oscillator is connected to this pin.
5	MCKO	O	Master clock output.
6	CKSEL	I	Clock selection input.
7	CLK	I	Bit clock input.
8	SI	I	Data input.
9	LRCK	I	LR clock input.
10	DEFS1	I	Deemphasis selection input 1.
11	DEFS2	I	Deemphasis selection input 2.
12	DSEL	I	Double speed playback selection input..
13	SMUTE	I	Soft mute selection input.
14	BSEL	I	Data bit length selection input.
15	DGND	—	Digital GND.
16	AGND	—	Analog GND.
17	RO	O	D/A converter output (R channel).
18	AOR	O	Filter amplifier output (R channel).
19	ANIR	I	Filter amplifier (-) input (R channel).
20	APIR	I	Filter amplifier (+) input (R channel).
21	RREF	—	Reference (R channel).
22	LREF	—	Reference (L channel).
23	APIL	I	Filter amplifier (+) input (L channel).
24	ANIL	I	Filter amplifier (-) input (L channel).
25	AOL	O	Filter amplifier output (L channel).
26	LO	O	D/A converter output (L channel).
27	AVDD	—	Analog power supply.
28	DVDD	—	Digital power supply.

IC, TC170C100AF

Pin No.	Pin Name	I/O	Description
1~5	YIN4~0	I	Y signal from MPEG chip.
6	GND	—	GND.
7~14	UIN7~0	I	U signal from MPEG chip.
15	GND	—	GND.
16, 17	VIN7, 6	I	V signal from MPEG chip.
18	VCC	—	Power supply terminal.
19~24	VIN5~0	I	V signal from MPEG chip.
25	GND	—	GND.
26	FLDO	O	Odd/even signal output of a field.
27	$\overline{\text{HDO}}$	O	$\overline{\text{HSYNC}}$ signal to MPEG chip.
28	$\overline{\text{VDO}}$	O	$\overline{\text{VSYNC}}$ signal to MPEG chip.
29	PCP	O	Clamp signal output.
30	CBLK	O	Blanking signal output (used depending upon type of DAC).
31	GND	—	GND.
32	FSC	O	Sub carrier output (Divided-by-four of NTSC: 14.31818 MHz. PAL: 17.734475 MHz).
33	CDG/$\overline{\text{MPEG}}$	O	CD-G or MPEG play selector signal to external RGB video selector.
34	TEST0	I	Operation mode setting terminal.
35	GND	—	GND.
36	13.5M	O	13.5 MHz output.
37	GND	—	GND.
38~43	R OUT7~2	O	Y/R signal output (Output format can be selectable in Y/R).
44	GND	—	GND.
45, 46	R OUT1, 0	O	Y/R signal output (Output format can be selectable in Y/R).
47~54	G OUT7~0	O	U/G signal output (Output format can be selectable in U/G).
55	VCC	—	Power supply terminal.
56~63	B OUT7~0	O	V/B signal output (Output format can be selectable in V/B).
64	GND	—	GND.
65	27M	I	27 MHz input.
66	TEST1	I	Operation mode setting terminal.
67	SHSYNC	O	Comparison clock for PLL synchronizing CLK.
68	MHSYNC	O	Reference clock for PLL synchronizing CLK.
69	VCC	—	Power supply terminal.
70	OSC1	I	14.31818 MHz input port (crystal oscillation) when supporting NTSC.
71	OSC2	O	NTSC: 14.31818 MHz crystal oscillation output terminal.
72, 73	GND	—	GND.
74	OSC3	I	17.734475 MHz input port (crystal oscillation) when supporting PAL.
75	OSC4	O	17.734475 MHz crystal oscillation output terminal.
76	VCC	—	Power supply terminal.
77, 78	TEST2, 3	I	Operation mode setting terminal.
79	FMOD	I	FLD0 output HL inversion selection signal.
80	PMOD	I	PCP output HL inversion selection signal.

Pin No.	Pin Name	I/O	Description
81	GND	—	GND.
82~85	T15~T12	I	RAM data input terminals 15 - 12 during RAM check.
86	T11OP3	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
87	T10OP2	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
88	T9OP1	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
89	T8OP0	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
90	VCC	—	Power supply terminal.
91	$\overline{\text{GHSYNC}}$	I	$\overline{\text{HSYNC}}$ signal from CD-G decoder.
92	$\overline{\text{GVSYNC}}$	I	$\overline{\text{VSYNC}}$ signal from CD-G decoder.
93	$\overline{\text{GCSYNC}}$	I	$\overline{\text{CSYNC}}$ signal from CD-G decoder.
94	GND	—	GND.
95~98	T7~4	I	RAM data input terminals 7 - 4 during RAM check.
99	T3IP3	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
100	T2IP2	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
101	T1IP1	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
102	T0IP0	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
103	GND	—	GND.
104	4FSC	O	104 NTSC: 14.31818 MHz. PAL: 17.734475 MHz buffer output.
105	GND	—	GND.
106	RAMCE	I	Chip enable signal for checking internal RAM and ROM check. (Fixed to low normally).
107	RAMW	I	Read/write signal for checking internal RAM and ROM check. (Fixed to low normally).
108	XT2C	I	XT2C input (used for HYNC DL delay).
109	GND	—	GND.
110	$\overline{\text{RST}}$	I	Input port of the reset signal.
111	GND	—	GND.
112	PAL/$\overline{\text{NTSC}}$	I	PAL/NTSC selector port.
113	HSYNCIN	O	Inverted output of $\overline{\text{HYNSC}}$ IN.
114	$\overline{\text{HSYNCIN}}$	I	$\overline{\text{SYNC}}$ signal from VST (only when supporting FMV engine).
115	$\overline{\text{VSYNCIN}}$	I	$\overline{\text{VSYNC}}$ from VSC. (only when supporting FMV engine).
116	GND	—	GND.
117~124	D7~0	I/O	CPU data bus signal.

Pin No.	Pin Name	I/O	Description
125	VCC	—	Power supply terminal.
126	CMOD	I	CLBK output HL inversion selection signal.
127	$\overline{\text{VOD}}$	I	Video output disable.
128	VCD/$\overline{\text{FMV}}$	I	VIDEO CD/DMV engine selection port.
129	$\overline{\text{CS}}$	I	Chip select signal.
130	$\overline{\text{RD/LDS}}$	I	READ signal from CPU $\overline{\text{RD}}$ (when supporting H8). $\overline{\text{LD}}$ (when supporting 680009).
131	$\overline{\text{WR}}$/R/$\overline{\text{W}}$	I	$\overline{\text{WRITE}}$ signal from CPU $\overline{\text{WR}}$ (when supporting H8). R/W (when supporting 680009).
132~134	A2~0	I	Address signal from CPU.
135	H8/$\overline{\text{68}}$	I	CPU H8-325/68000 selection port.
136	GND	—	GND.
137	$\overline{\text{HSYNCO}}$	O	Horizontal sync output.
138	$\overline{\text{VSYNCO}}$	O	Vertical sync output.
139	$\overline{\text{CSYNCO}}$	O	Composite sync output. $\overline{\text{CSYNC}}$ signal from video encoder.
140	SMOD	I	13.5 MHz ↑ ↓ selection of SYNC signal output. Selection is possible at the final stage of $\overline{\text{HDO}}$, $\overline{\text{VDO}}$, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$, SHYNC, PCP, CBLK, FLDO. (However, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$ are supported during SYNC output of the CD-G decoder.)
141	VCC	—	Power supply terminal.
142~144	YIN7~5	I	Y signal from MPEG chip.

IC, MB89627

Pin No.	Pin Name	I/O	Description
1	CCLK	O	SSP, DSP Control Clock.
2	DATA	O	SSP, DSP Control Data.
3	SENS	I	SSP, DSP Status.
4	XLAT	O	SSP, DSP Command Latch.
5	XRST	O	SSP, DSP Reset.
6	TVMSW	O	OFF/NTSC/PAL/PAL60/PAL AUTO/AUTO/TEST. *NOTE
7	DMUTE	O	Digital Mute.
8	AMUTE	O	Analog Mute.
9	LDON	O	Servo PCB Power on.
10	VCDRST	O	Video CD Reset.
11	OPTON	O	Optical Digital Output ON.
12	VCC	—	A/D Converter VCC.
13	VCC	—	A/D Converter VREF.
14	VSS	—	A/D Converter VSS.
15	HOSTIRQ	I	Host CPU Interrupt Request.
16	SCOR	I	Subcode Sync 0. (Subcode IRQ)
17	ILSW	I	Inter Limit Switch.
18	VCDIRQ	I	Video CD Decoder Interrupt Request.
19	N. C.	I	Not used.
20	RST	I	CPU Reset.
21	MODE0	I	CPU MODE. (Pull-down)
22	MODE1	I	CPU MODE. (Pull-down)
23	CLKIN	O	8MHz System Clock.
24	CLKOUT	I	8MHz System Clock.
25	VSS	—	GND.
26	ALE	O	Address Latch Strobe.
27	RD	O	Data Read Strobe.
28	WR	O	Data Write Strobe.
29	CLK	O	Clock out.
30	READY	I	Video CD Decoder Ready.
31	OSDCS	O	OSDC Enable.
32	OSDCLK	O	OSDC Data Clock.
33	OSDSIN	O	OSDC Data.
34~41	A8~A15	O	Address Bus 8~15.
42~49	AD0~AD7	I/O	Address/Data Bus 0~7.
50	VSS	—	GND.
51	VCD/CDG	O	Video CD/CDG Switch.
52	HCLK	I	Host CPU Control Clock.
53	ST	O	Host CPU Control Send Data.
54	RT	I	Host CPU Control Receive Data.
55	TRACK	I	Travase Counter.

Pin No.	Pin Name	I/O	Description
56	ENCRST	O	Video Encoder Reset.
57	DVCC	—	DVCC.
58	PAL/PAL60	O	PAL/PAL60 Switch.
59	XNTSC	O	PAL/NTSC Switch.
60	SQCK	O	Subcode Q Read Clock.
61	SQSO	I	Subcode Q Serial Data.
62	BUSY	I/O	Host CPU I/F Busy Signal.
63	FOK	I	Focus Servo OK Detect.
64	GFS	I	Frame Sync Detect.

Note

- Analog input (TVMSW: 6 pin) of the microprocessor is divided into 7, then controlled.
- The output are the command setting (Set Video Format) to the two ports of PAL/PAL60 (58 pin), XNTSC (59 pin) and IC301 (CL484).

TVMSW (6 pins)		DISC encoding system	TV output mode	PAL/PAL60 (58 pins)	XNTSC (59 pins)	Set Video Format
Volt (V)	Mode					
5.00 4.58	OFF	—	Not used (NTSC output mode).			
4.58 3.75	NTSC	—	NTSC	H	L	NTSC
3.75 2.92	PAL	—	PAL	H	H	PAL
2.92 2.08	PAL60	—	PAL60	L	H	NTSC
2.08 1.25	PAL AUTO	NTSC	PAL60	L	H	NTSC
		PAL	PAL	H	H	PAL
1.25 0.42	AUTO	NTSC	NTSC	H	L	NTSC
		PAL	PAL	H	H	PAL
0.42 0.00	TEST	—	For servo circuit adjustment (NTSC output mode).			

*1 As to identification of the disc encoding system, it is identified from the V_SIZE (1A1h/word) of the MPEG data.

*2 "For servo circuit adjustment" is the process during adjustment (when variable resistor is operated by service engineer) that the microprocessor enters the emergency process routine if the servo system goes extremely out of the servo range.

*3 In addition to the above, ENCRST (56 pin) is the reset signal for TV encoder, issues the active "L" pulse when each of the input port of CDGSW, NTB, CVSY, HSY, PIXCLK, GCLK, PAL60B and VCLK of IC401 (BU1417AK) has changed as follows:

① When the power is supplied to the circuit boards of the CD block,

② When starting to reach TOC.

③ The modes have changed as follows:

- TVMSW is switched.
- Switching of encoding system owing to exchange of video CD disc
- Exchange of video CD disc with the CD-DA or CD-G.

IC, CL484

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data'latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	—	GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3	—	Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	CDG-S0S1	I	Block start sync.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	CDG-VFSY	I	Frame start or composite sync.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	CDG-SDATA	I	Subcode data.
121	CDG-SCLK	I/O	Subcode data clock.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	FSC1	O	Output generated by dividing-by-4 the pin-126 input CLK.
125	VSS	—	GND.
126	FSC4	I	Frequency divider input.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, BU1417AK

Pin No.	Pin Name	I/O	Description
1	BOSD	I	OSD Blue Data input.
2	GD0	I	Green Data Bit 0. (LSB)
3~8	GD1~GD6	I	Green Data Bit 1~6.
9	GND	—	Digital ground.
10	GD7	I	Green Data Bit 7. (MSB)
11	BD0	I	Blue Data Bit 0. (LSB)
12~14	BD1~BD3	I	Blue Data Bit 1~3.
15	OSDSW	I	OSD input enable.
16	CDGSWB	I	Select Video-CD/$\overline{\text{CD-G}}$.
17~19	BD4~BD6	I	Blue Data Bit 4~6.
20	BD7	I	Blue Data Bit 7. (MSB)
21	GND	—	Digital ground.
22	NTB	I	Select $\overline{\text{NTSC}}$/PAL mode.
23, 24	IM0, IM1	I	Input mode set Bit 0, 1.
25, 26	TEST1, TEST2	I	Normally pulldown to GND.
27	CVSY	I	C-SYNC or V-SYNC input.
28	HSY	I	H-SYNC input.
29	PIXCLK	O	1/2 Freq. of internal CL.
30	BLKB	I	Data blanking $\overline{\text{ENABLE}}$.
31	VDD	—	Digital VDD.
32	INT	I	INTERLACE/$\overline{\text{NON-INTERLACE}}$.
33	SLABEB	I	Set mode MASTER/$\overline{\text{SLABE}}$.
34	ADDH	I	ADD One_line at Non-inter.
35	VREF	I	Reference voltage. (1.29V)
36	CGND	—	Chroma output ground.
37	COUT	O	Chroma output.
38	VGND	—	Composite output ground.
39	VOUT	O	Composite output.
40	AVSS	—	Analog (DAC, VREF) ground.
41	NC	—	Not used.
42	IR	I	Reference resistor. (1.2K)
43	AVDD	—	Analog (DAC, REF) VDD.
44	YGND	—	Luminance output ground.
45	YOUT	O	Luminance output.
46	G4FSC	I	Pulldown to GND.
47	GCLK	I	Video clock input for CD-G.
48	YCOFF	I	DAC (YOUT, COUT) off.
49	YFILON	I	Pulldown to GND.
50	PAL60B	I	$\overline{\text{PAL60 ON}}$ at NTB=HIGH.
51	VCLK	I	Video clock input for VCD.
52	RSTB	I	Logic part initial reset.

Pin No.	Pin Name	I/O	Description
53	CLKSW	I	Divide input CLK $\overline{\text{ENABLE}}$.
54	RD0	I	Red data Bit 0. (LSB)
55, 56	RD1, RD2	I	Red data Bit 1, 2.
57	ROSD	I	OSD Red data input.
58~60	RD3~RD5	I	Red data Bit 3~5.
61	VDD	—	Digital VDD.
62	RD6, RD7	I	Red data Bit 6, 7.
63	GOSD	I	OSD green data input.

IC, BU2173AF

Pin No.	Pin Name	I/O	Description
1	VDD	—	Digital VDD.
2	TSTO	O	Open during normal mode. (Used in test mode.)
3	XTALI	I	Reference oscillator input.
4	XTALO	O	Reference oscillator output.
5	CTRLA	I	CD-G/VCD clock selector terminal.
6	CTRLB	I	Fixed to "H" during normal mode.
7	CTRLC	I	CD-G PAL/NTSC clock selector terminal.
8	TSTI	I	Connected to Vss during normal mode. (Used in test mode.)
9	VSS	—	Digital GND.
10	AVSS	—	Analog GND.
11	FOUT3	O	Not used. Open during normal mode.
12	VSSIO	—	I/O GND.
13	FOUT2	O	Clock output (2).
14	TEST	—	Test mode setting. Connected to Vss during normal mode.
15	FOUT1	O	Clock output (1).
16	VDDIO	—	I/O VDD.
17	FOUT4	O	Clock output (4).
18	AVDD	—	Analog VDD.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

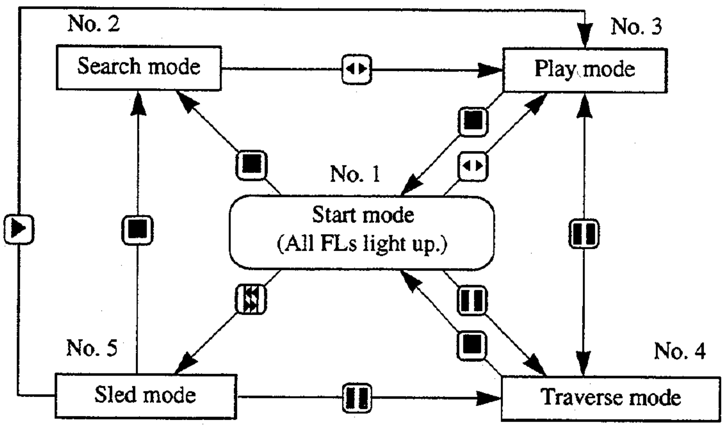
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	● Test mode is activated. ● Laser diode turns always ON. (CD block power is ON.)	● FL display check (All displays light.) ● APC circuit check ● Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD--	● Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO ● Check focus search waveform ● Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	● Normal playback ● Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD 1	● During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	● Pickup moves to the outermost track ● Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

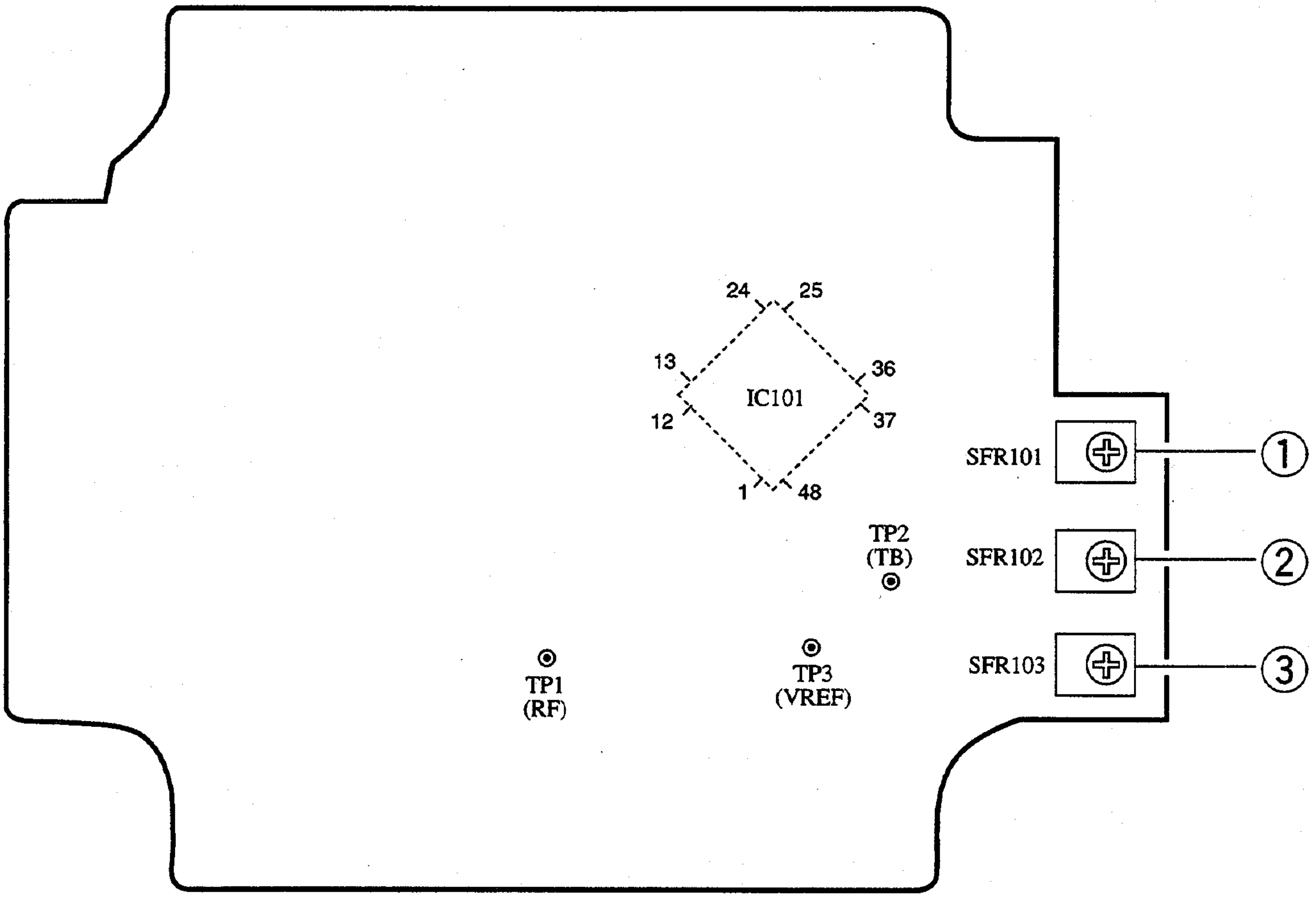
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

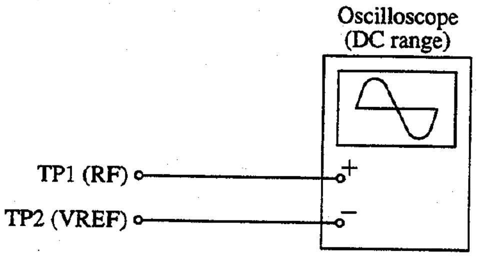
B CD MECHA C.B


24
25
13
36
IC101
12
37
1
48
TP2
(TB)
SFR101
SFR102
SFR103
①
②
③
TP1
(RF)
TP3
(VREF)

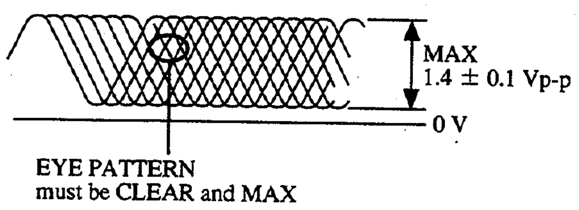
Note: Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

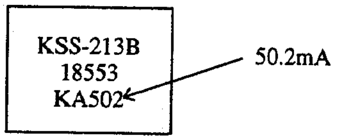


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR101 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



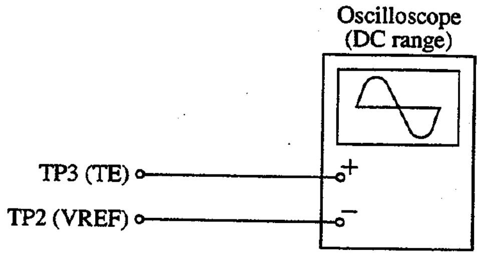
VOLT/DIV : 50mV
TIME/DIV : 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R127 (10Ω). The difference for the specified value shown on the lavel must be within ± 6.0mA.

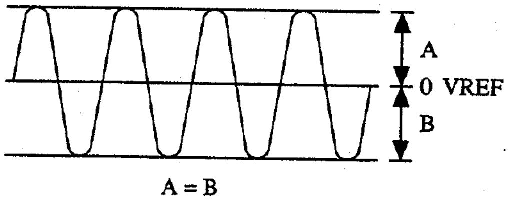


$$\text{Laser current Iop} = \frac{\text{Voltage across R127}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR103 to decrease the tracking gain.
5) Adjust SFR102 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



VOLT/DIV : 20mV
TIME/DIV : 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

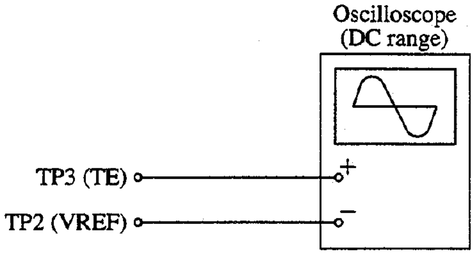
Gain / Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP → ▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.)	—	low
● Disc stops to rotate shortly after STOP→ ▶ PLAY.	low or high	—
● Sound is interrupted during PLAY. Or time counter display stops.	—	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

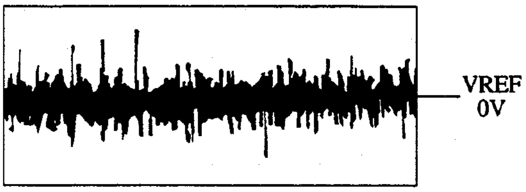
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD MECHA C.B.
4) Adjust SFR103 so that the waveform appears as shown in the figure below. (tracking gain adjustment)

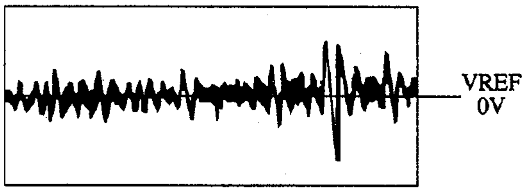


VOLT/DIV: 50 mV
TIME/DIV: 1mS

- Incorrect example

Low tracking gain

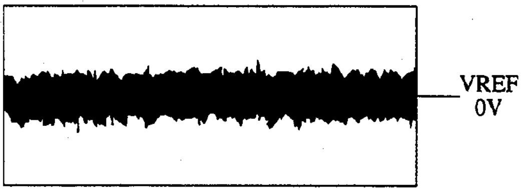
The fundamental wave appears as compared with the waveform adjusted.



VOLT/DIV: 50 mV
TIME/DIV: 1mS

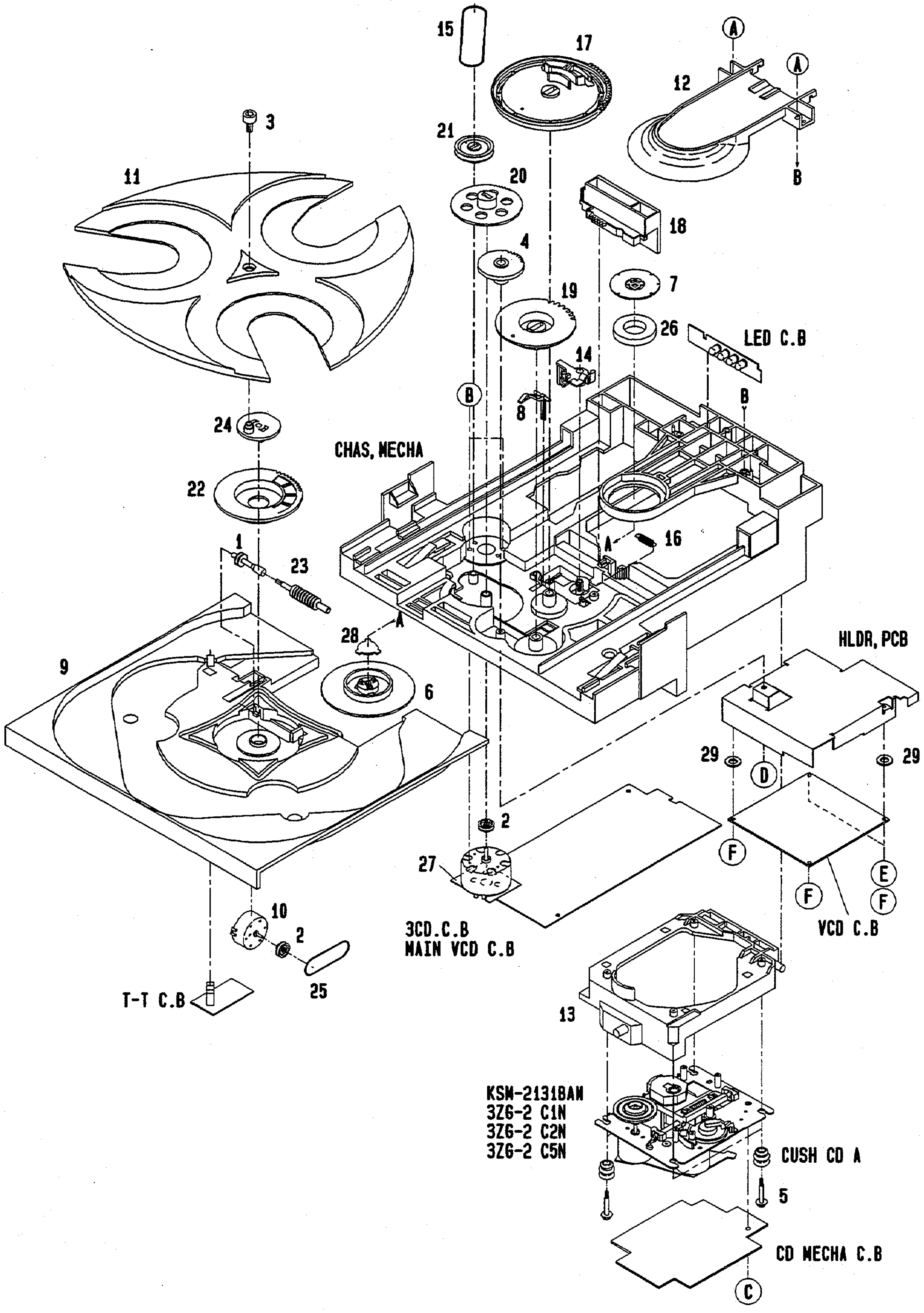
High tracking gain

The frequency of the fundamental wave is higher than that in low gain.



VOLT/DIV: 50 mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1／1

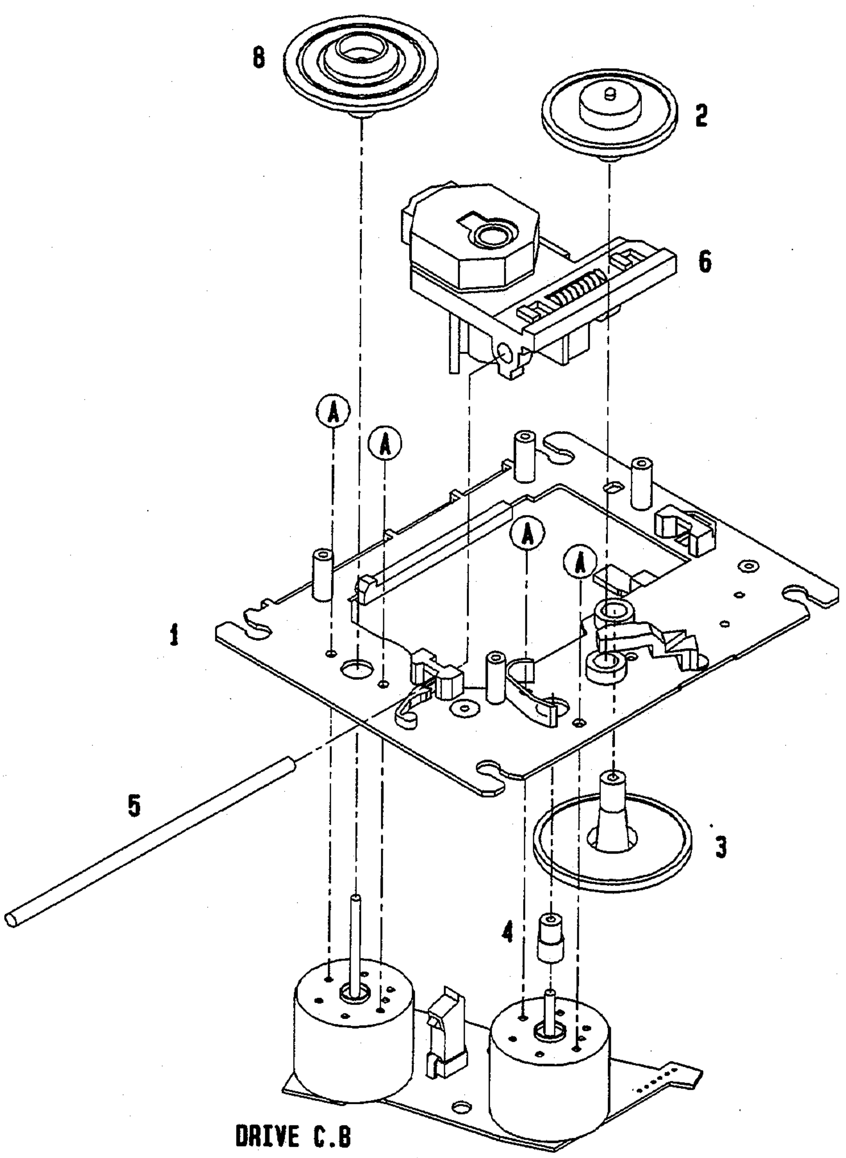

15
17
Ⓐ
Ⓐ
12
B
3
21
11
20
18
4
7
19
26
LED C.B
14
Ⓑ
8
B
24
CHAS, MECHA
22
1
23
A
16
28
A
HLDR, PCB
9
6
29
Ⓓ
29
2
Ⓕ
27
Ⓔ
Ⓕ
Ⓕ
10
VCD C.B
2
3CD.C.B
MAIN VCD C.B
25
T-T C.B
13
KSM-2131BAM
3Z6-2 C1N
3Z6-2 C2N
3Z6-2 C5N
CUSH CD A
5
CD MECHA C.B
Ⓒ

MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	84-ZG1-239-11K		PULLY,WORM N
2	81-ZG1-212-01K		PULLY,LOAD MO
3	81-ZG1-239-019		S-SCREW,TT
4	81-ZG1-291-019		GEAR,TRAY RELAY NO3
5	81-ZG1-271-019		S-SCREW,MECH REAR
6	81-ZG1-277-219		HLDR,MAGNET N
7	81-ZG1-255-119		PLATE,MAGNET MK2
8	83-ZG3-213-019		LVR,SW
9	84-ZG1-003-219		TRAY,NO2-B
10	87-045-364-019		MOTOR,(BCH3B14)
11	84-ZG1-005-119		TURNTABLE,NO1
12	84-ZG1-010-019		IND,CD N<V3L,V4L>
12	84-ZG1-011-019		REFLECTOR,CD<A,B,Z,V5>
13	84-ZG1-212-119		HLDR,MECHA NO2
14	84-ZG1-208-019		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-019		SPR-E CAM S
17	84-ZG1-215-219		GEAR,MAIN CAM BLU
18	84-ZG1-216-219		SLIDE,MECHA CAM YEL
19	84-ZG1-205-119		GEAR,TRAY
20	84-ZG1-206-119		GEAR,RELAY
21	84-ZG1-219-019		PULLY,RELAY BGE
22	84-ZG1-221-019		GEAR,MAIN TT
23	84-ZG1-238-01K		GEAR,WORM N
24	84-ZG1-224-019		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	87-036-326-010		MAGNET,CLAMPER 93<A,B,Z,WR,V5>
26	83-ZG3-602-010		RING,MAG<V3L,V4L>
27	80-CD3-214-019		CUSH CD A
28	84-ZG1-248-019		SPR-C,WORM
29	82-DW1-220-019		SPACER,DIA 3.6-8-0.24<V3L>
A	87-067-703-019		BVT2+3-10 (W/0 SLOT)<EXCEPT WR>
B	87-251-070-419		U+2.6-3<Z>
C	87-342-036-219		UT2+2-8<V3L,V4L,V5>
D	87-067-579-019		BVT 2+3-8 W/O SLOT<V3L,V4L>
E	81-557-598-010		UTT+2-5 C-TITE<V4L>
F	87-067-767-019		BVTT+2.6-6<V3L>
G	87-067-058-019		FW,3.2-8-0.5<V4L>

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C5N <WR>)

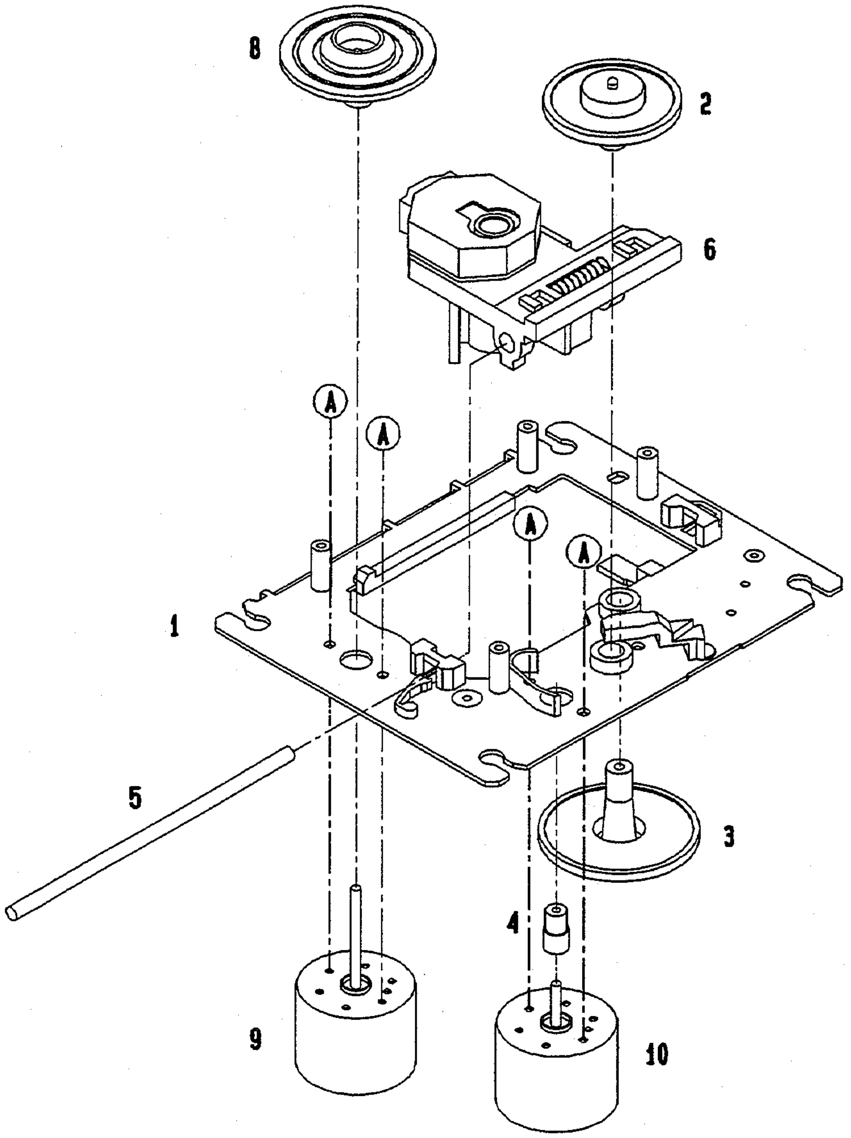


CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C5N <WR>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S
2	83-ZG2-204-419		GEAR,A
3	83-ZG2-205-219		GEAR,B
4	83-ZG2-220-01K		GEAR MOTOR 2
5	83-ZG2-207-119		SHAFT,SLIDE
6	87-070-445-010		PICK-UP,KSS-213B
8	83-ZG2-227-01K		TURN TABLE,C1
A	87-261-032-219		SCREW V+2-3

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-233-019		TURN TABLE,A5
3	83-ZG2-205-219		GEAR,B	9	87-045-358-019		MOT,RF-310T A 43
4	83-ZG2-220-01K		GEAR MOTOR 2	10	87-045-356-019		MOT,RF-310T A 30
5	83-ZG2-207-119		SHAFT,SLIDE	A	87-261-032-219		SCREW V+2-3

4ZG-1A

ELECTRICAL MAIN PARTS LIST

DESCRIPTION で判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-294-019		IC,CXD2508AQ
	87-017-745-019		IC,CXA1782BQ
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-239-089		C-TR,DTC114TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-A30-039-040		C-TR,2SD1383K<D>
DIODE			
	87-020-465-089		DIODE,1SS133
	87-020-330-089		C-DIODE,DAP202K
3CD C.B			
C101	87-010-194-089		C-CAP,S 0.047-25 F
C102	87-010-180-089		C-CAP,S 1500P-50 B
C103	87-018-134-089		CAP,TC-U 0.01-16 Y
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-015-698-049		CAP,E 4.7-50 7L
C106	87-010-060-049		CAP,E 100-16 7L
C107	87-010-197-089		C-CAP,S 0.01-25 B
C108	87-016-461-089		C-CAP,S 0.47-16 F
C109	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-318-089		C-CAP,S 47P-50 CH
C116	87-010-318-089		C-CAP,S 47P-50 CH
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-260-089		CAP,E 47-25 SME
C119	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C120	87-018-209-080		CAP,TC-U 0.1-50 F
C121	87-018-134-089		CAP,TC-U 0.01-16 Y
C151	87-010-182-089		C-CAP,S 2200P-50 B
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-196-089		C-CAP,S 0.1-25 F
C154	87-010-196-089		C-CAP,S 0.1-25 F
C155	87-010-404-089		CAP,E 4.7-50 SME
C156	87-010-193-089		C-CAP,S 0.033-25 F
C157	87-010-197-089		C-CAP,S 0.01-25 B
C158	87-010-401-089		CAP,E 1-50 SME
C159	87-010-382-089		CAP,E 22-25 SME
C160	87-010-213-089		C-CAP,S 0.015-25 B
C161	87-018-134-089		CAP,TC-U 0.01-16 Y
C162	87-010-263-089		CAP,E 100-10 SME 5X11
C163	87-010-197-089		C-CAP,S 0.01-25 B
C164	87-010-193-089		C-CAP,S 0.033-25 F
C165	87-010-197-089		C-CAP,S 0.01-25 B
C166	87-010-193-089		C-CAP,S 0.033-25 F
C167	87-010-197-089		C-CAP,S 0.01-25 B
C169	87-010-150-089		C-CAP,S 6P-50 CH
C170	87-010-263-089		CAP,E 100-10 SME 5X11
C171	87-010-178-089		C-CAP,S 1000P-50 B
C172	87-010-198-089		C-CAP,S 0.022-25 B
C173	87-010-196-089		C-CAP,S 0.1-25 F
C174	87-010-197-089		C-CAP,S 0.01-25 B
C175	87-010-263-089		CAP,E 100-10 SME 5X11
C176	87-010-248-089		CAP,E 220-10 SME
C177	87-010-197-089		C-CAP,S 0.01-25 B
C178	87-010-260-089		CAP,E 47-25 SME
C179	87-010-196-089		C-CAP,S 0.1-25 F
C180	87-010-196-089		C-CAP,S 0.1-25 F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		G-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16 11L
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C511	87-010-185-089		C-CAP,S 3900P-50 B
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-137-080		CAP,E,22-16 BP
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-197-089		C-CAP,S 0.01-25 B<G>
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R177	87-022-365-089		C-RES,S 100K-1/10W F
R178	87-022-363-089		C-RES,S 68K-1/10W F
R179	87-022-363-089		C-RES,S 68K-1/10W F
R180	87-022-363-089		C-RES,S 68K-1/10W F
R181	87-022-363-089		C-RES,S 68K-1/10W F
R182	87-022-365-089		C-RES,S 100K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-175-089		SFR,47K DIA6 V
SFR152	87-024-176-089		SFR,100K DIA6 V
SFR153	87-024-176-089		SFR,100K DIA6 V

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>

LED C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

T-T C.B

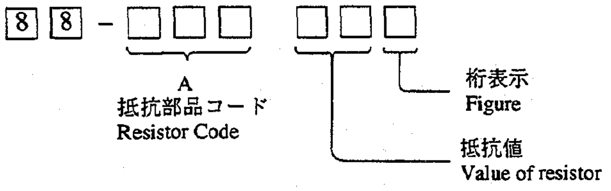
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

MOTOR C.B

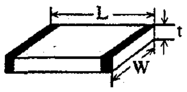
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

CXA1782BQ .... See page 64
LC7872E .... See page 62

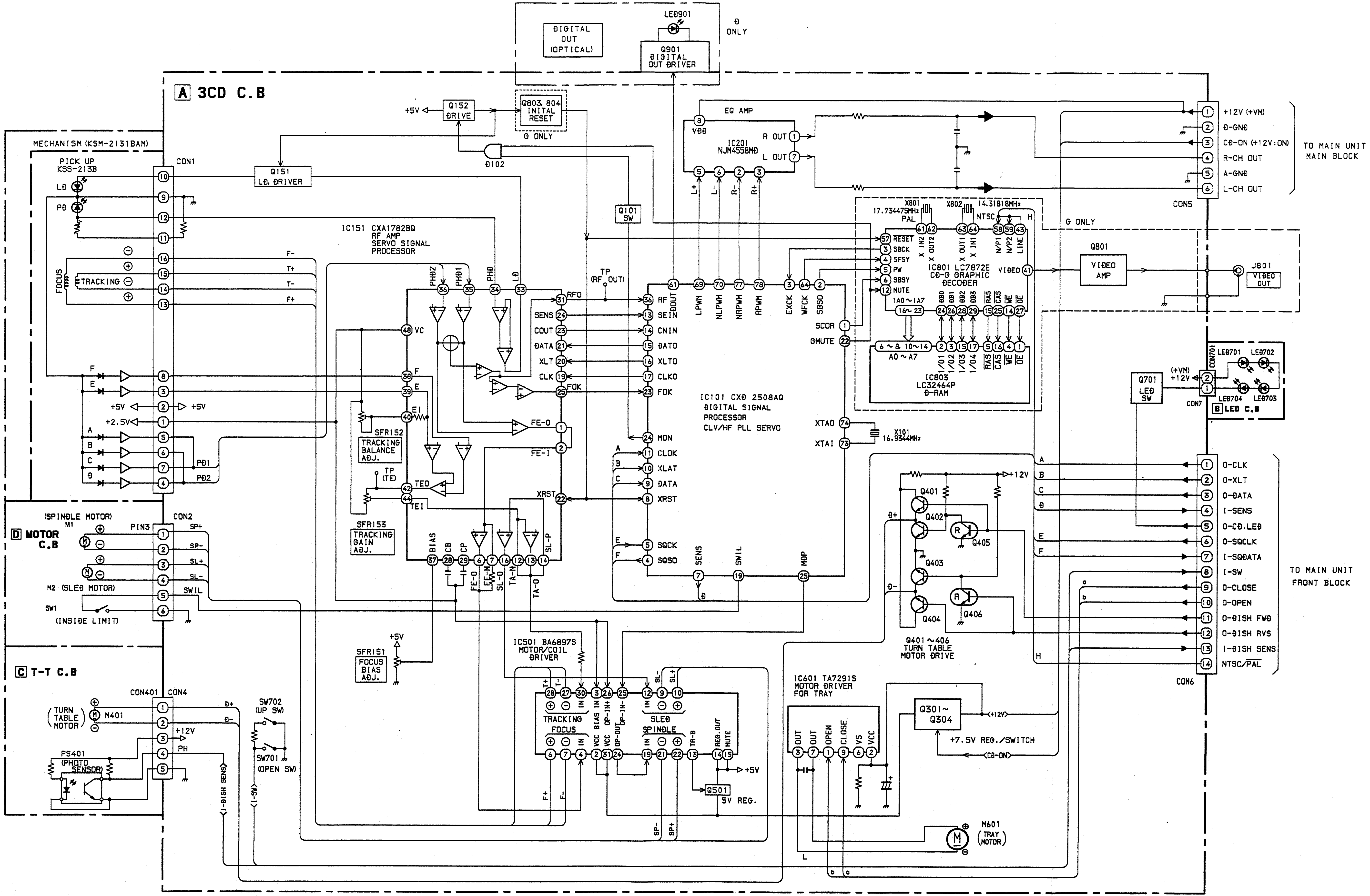
■ MECHANICAL EXPLODED VIEW 1／1

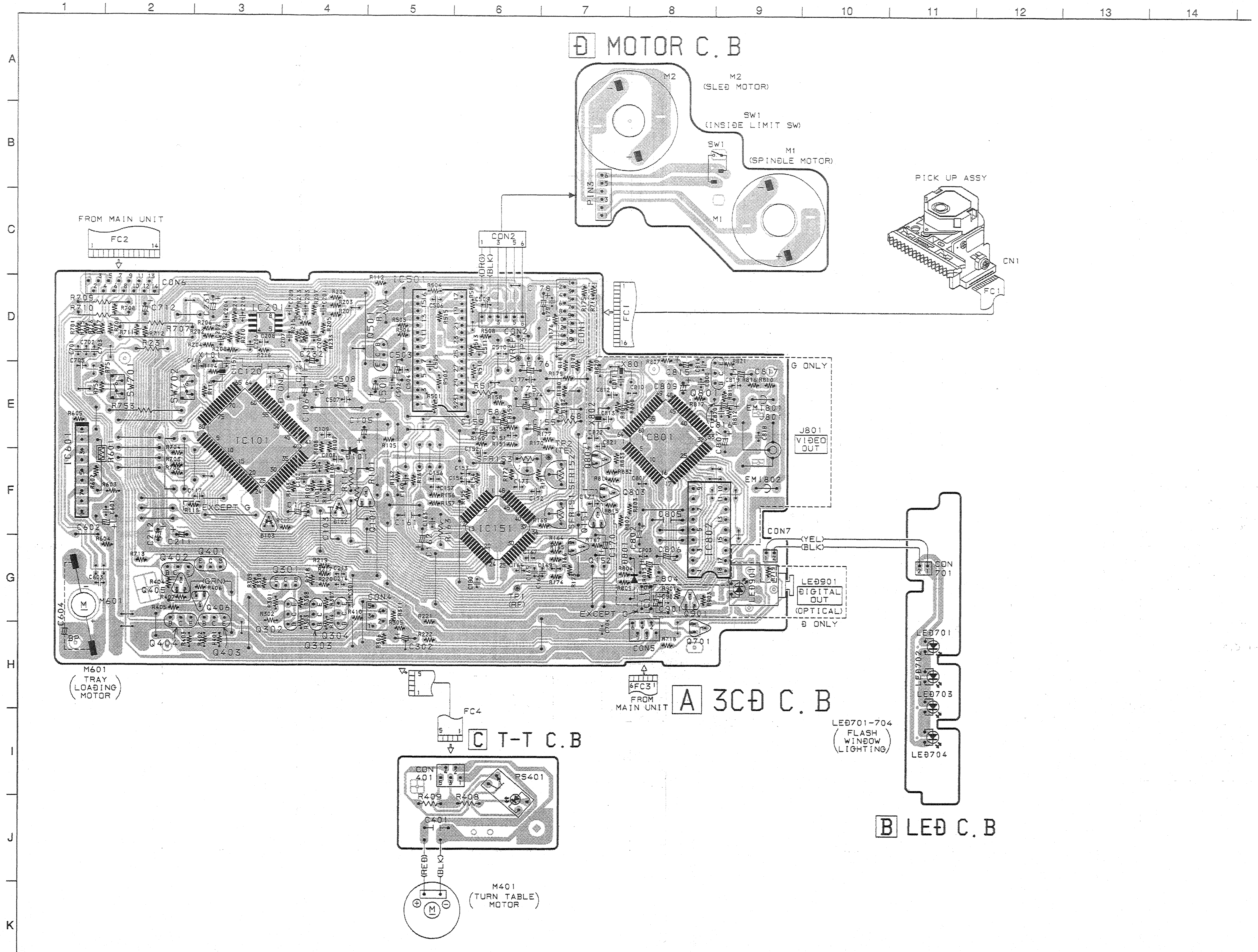
See page 95

■ MECHANICAL PARTS LIST 1／1

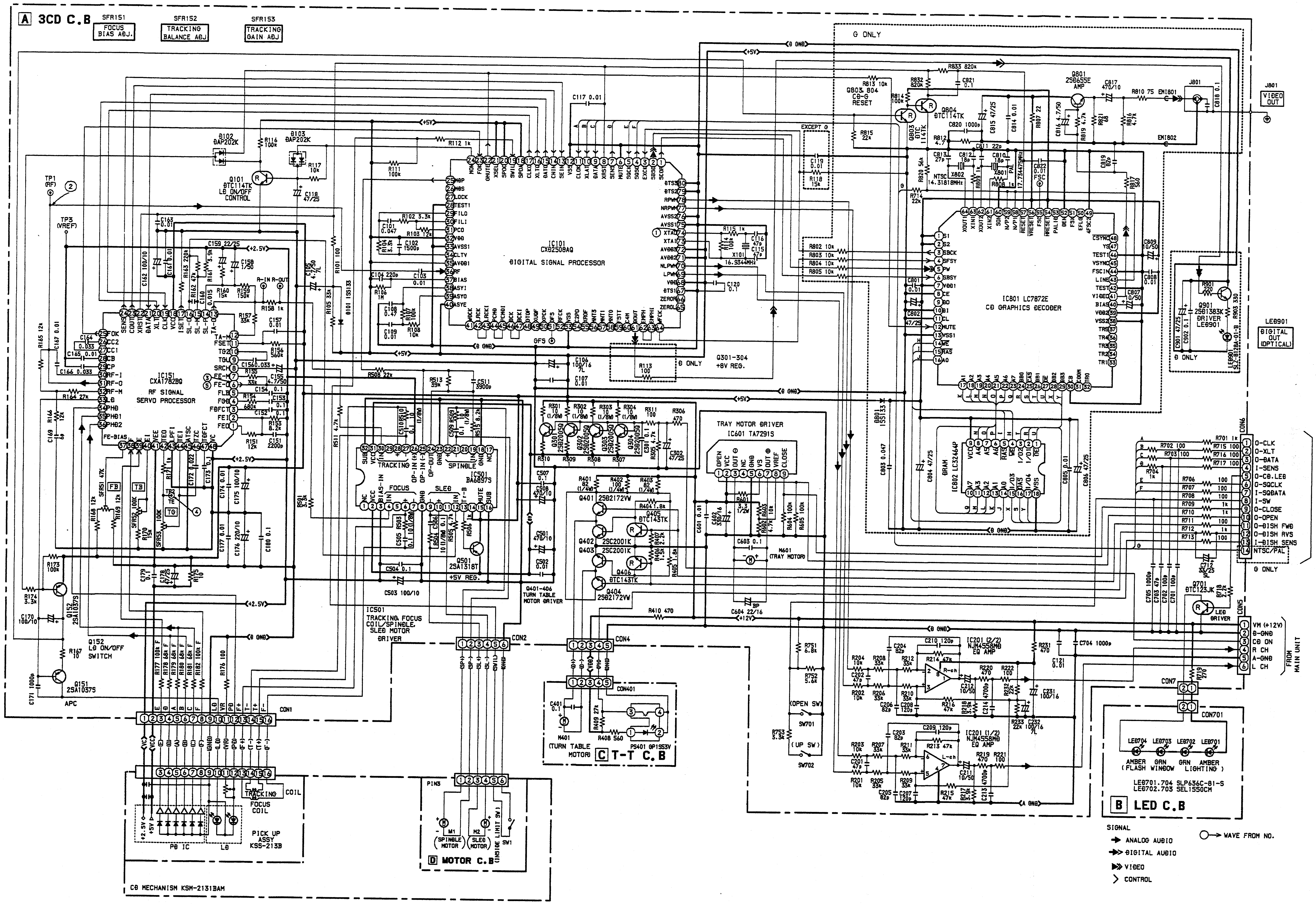
See page 96

BLOCK DIAGRAM


A 3CD C.B
DIGITAL OUT (OPTICAL)
LED901
Q901 DIGITAL OUT DRIVER
D ONLY
Q152 DRIVE
Q803, 804 INITIAL RESET
G ONLY
D102
Q151 LD DRIVER
MECHANISM (KSM-213BAM)
PICK UP KSS-213B
CON1
FOCUS
TRACKING
IC151 CXA1782BQ RF AMP SERVO SIGNAL PROCESSOR
SFR152 TRACKING BALANCE ADJ.
SFR153 TRACKING GAIN ADJ.
SFR151 FOCUS BIAS ADJ.
TP (RF OUT)
TP (TE)
Q101 SW
EQ AMP
IC201 NJM4558MD
R OUT
L OUT
IC101 CXD 2508AQ DIGITAL SIGNAL PROCESSOR CLV/HF PLL SERVO
X101 16.9344MHz
X801 17.734475MHz PAL
X802 14.31818MHz NTSC
IC801 LC7872E CD-G GRAPHIC DECODER
IC803 LC32464P D-RAM
G ONLY
Q801 VIDEO AMP
J801 VIDEO OUT
CON5
+12V (+VM)
D-GND
CD-ON (+12V:ON)
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
CON701
LED701
LED702
LED704
LED703
CON7
B LED C.B
Q701 LED SW
D MOTOR C.B
(SPINDLE MOTOR) M1
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
PIN3
CON2
IC501 BA6897S MOTOR/COIL DRIVER
TRACKING
FOCUS
SLED
SPINDLE
Q501 5V REG.
Q401 ~ 406 TURN TABLE MOTOR DRIVE
Q401
Q402
Q403
Q404
Q405
Q406
IC601 TA7291S MOTOR DRIVER FOR TRAY
Q301~ Q304
+7.5V REG./SWITCH
(CD-ON)
M601 (TRAY MOTOR)
CON6
0-CLK
0-XLT
0-DATA
I-SENS
0-CD.LED
0-SQCLK
I-SQDATA
I-SW
0-CLOSE
0-OPEN
0-DISH FWD
0-DISH RVS
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
C T-T C.B
CON401
CON4
(TURN TABLE MOTOR) M401
PS401 (PHOTO SENSOR)
SW702 (UP SW)
SW701 (OPEN SW)
(I-DISH SENS)
(I-SW)


D MOTOR C.B
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
M1 (SPINDLE MOTOR)
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
(ORG)
(BLK)
CON1
IC101
IC201
IC501
IC151
IC801
IC802
IC601
G ONLY
J801 VIDEO OUT
EM1801
EM1802
CON7
(YEL)
(BLK)
CON 701
LED901 DIGITAL OUT (OPTICAL)
D ONLY
EXCEPT G
CON5
Q701
FC3
FROM MAIN UNIT
A 3CD C.B
M601 TRAY LOADING MOTOR
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LED C.B
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K

SCHEMATIC DIAGRAM

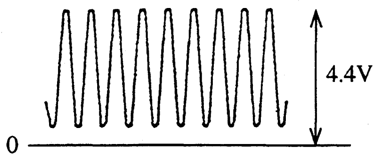

A 3CD C.B
SFR151 FOCUS BIAS ADJ.
SFR152 TRACKING BALANCE ADJ
SFR153 TRACKING GAIN ADJ
G ONLY
EXCEPT G
IC101 CXD2508AQ DIGITAL SIGNAL PROCESSOR
IC151 CXA1782BQ RF SIGNAL SERVO PROCESSOR
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC32464P DRAM
IC501 BA6897S
IC501 TRACKING FOCUS COIL/SPINDLE, SLED MOTOR DRIVER
TRAY MOTOR DRIVER IC601 TA7291S
Q101 DTC114TK LD ON/OFF CONTROL
Q152 LD ON/OFF SWITCH
Q151 2SA1037S
APC
Q301-304 +8V REG.
Q401-406 TURN TABLE MOTOR DRIVER
Q501 2SA1318T +5V REG.
Q801 2SD655E AMP
Q803, 804 CD-G RESET
Q901 2SD1383K DRIVER LED901
Q701 DTC123JK LED DRIVER
J801 VIDEO OUT
LED901 DIGITAL OUT (OPTICAL)
D ONLY
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD EQ AMP
M601 (TRAY MOTOR)
M401 (TURN TABLE MOTOR)
PS401 GP1S53V
C T-T C.B
D MOTOR C.B
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
PICK UP ASSY KSS-213B
PD IC
LD
TRACKING COIL
FOCUS COIL
CD MECHANISM KSM-2131BAM
CON1
CON2
CON4
CON401
CON5
CON6
CON7
CON701
(OPEN SW) SW701
(UP SW) SW702
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
FROM MAIN UNIT
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT
LED0704 LED0703 LED0702 LED0701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED0701.704 SLP636C-81-S
LED0702.703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO.

WAVE FORM

①

SYSTEM CLOCK
IC101 Pin (74) (XTAO)
f=16.9344MHz

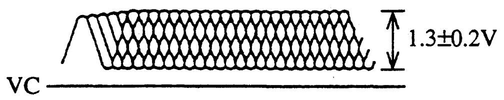
VOLT/DIV: 2V
TIME/DIV: 0.1µS



②

RF
TP1 (RF)

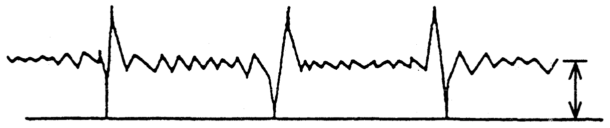
VOLT/DIV: 500mV
TIME/DIV: 0.5µS



③

Focus
IC151 Pin ⑥ (FE-O)

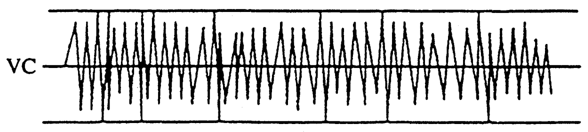
VOLT/DIV: 200mV
TIME/DIV: 2mS



④

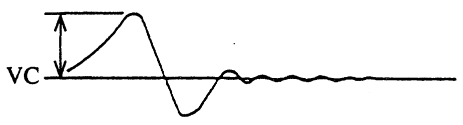
Tracking
TP2 (TE)

TIME/DIV: 1mS



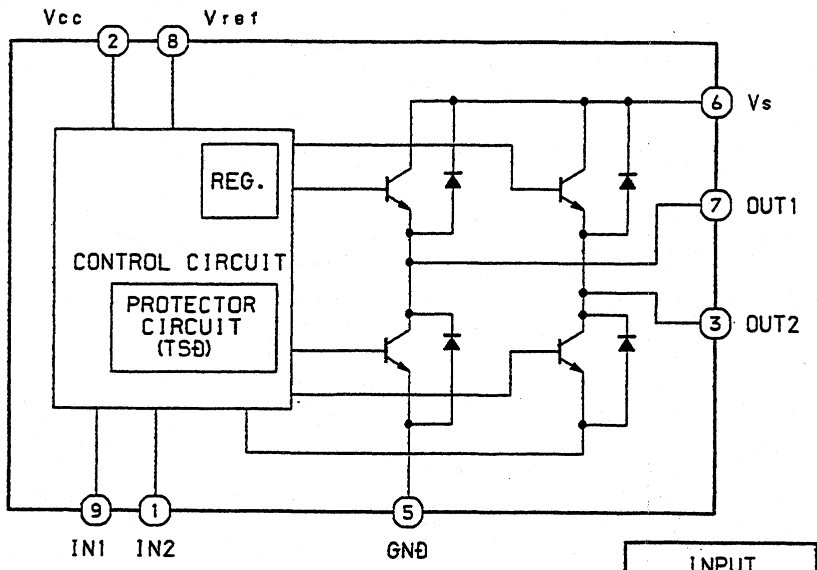
⑤

Focus Search
IC151 Pin ⑥ (FE-O)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, CXD2508AQ

Pin No.	Pin name	I/O	Description
1	SCOR	O	1H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUBP~W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from CPU .
10	XLAT	I	Latch input from CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from CPU to transfer serial data.
12	VSS	—	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18, 20	SPOA, C	I	Microprocessor expansion interface.
19	XTSL	I	X'tal selection input terminal. "L" at 16.9344MHz X'tal. "H" at 33.86888MHz.
22	XLON	O	Microprocessor expansion interface.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
28	TEST1	I	TEST. (Connected to GND)
29	FILO	O	Filter output to master PLL. (slave=digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	—	Power supply input. (+5V)
33	AVSS1	—	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	—	Power supply input. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparate voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L=VSS, H=VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON
41	WDCK	O	D/A interface, word clock (2Fs) for 48-bit slot.
42	LRCK	O	D/A interface, LR clock (Fs) for 48-bit slot.

Pin No.	Pin name	I/O	Description
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCKI	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUFG output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	—	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the playback disc has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	No sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	No sound data detection output. H (R-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC. (Normally "L")
68	VDD	—	Power supply input. (+5V)
69	NLPWM	O	L-ch PWM output. (reversed polarity)
70	LPWM	O	L-ch PWM output. (normal polarity)
71	AVDD2	—	Power supply input to L-ch PWM driver. (Connected to +5V)
72	AVDD3	—	Power supply input to X'tal. (Connected to +5V)
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS1	—	GND input to X'tal. (Connected GND)
76	AVSS2	—	GND input to PWM driver. (Connected to GND)
77	NRPWM	O	R-ch PWM output. (reversed phase)
78	RPWM	O	R-ch PWM output. (normal phase)
79	DTS2	I	TEST-2 for DAC. (Normally "L")
80	DTS3	I	TEST-3 for DAC. (Normally "L")

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

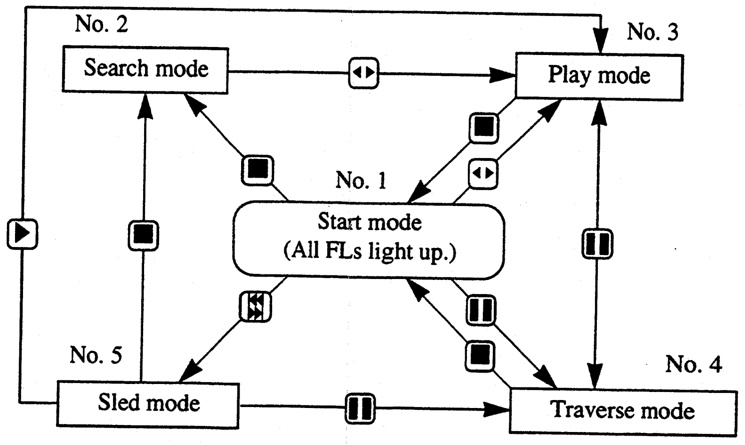
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD--	• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

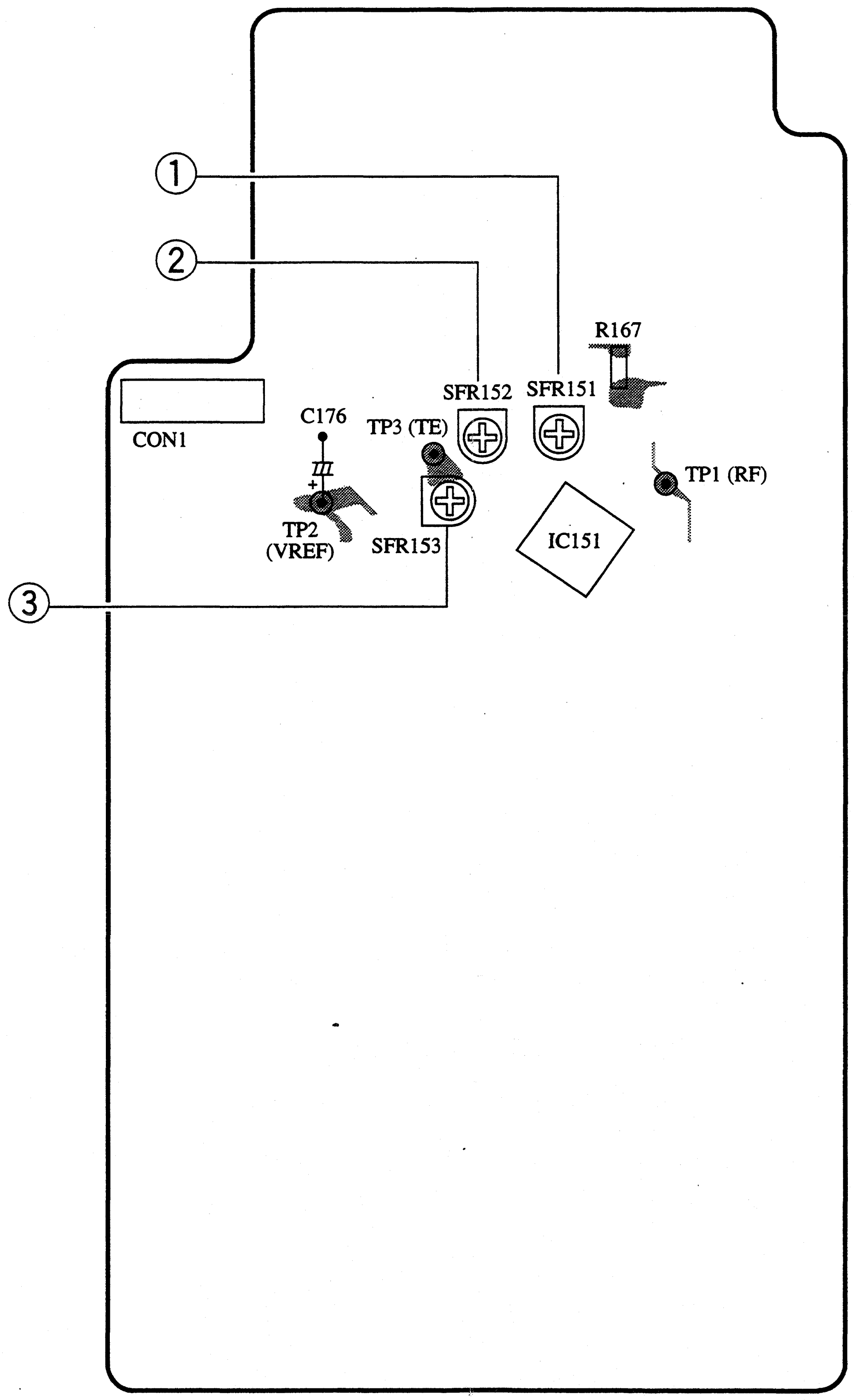
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



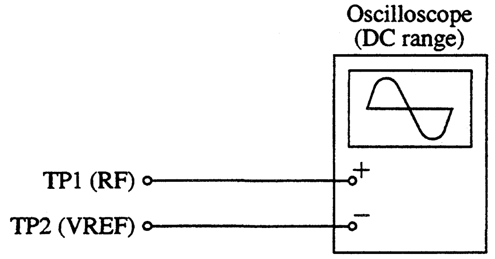
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

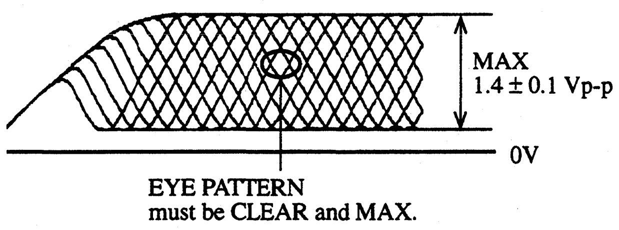

①
②
③
R167
SFR152
SFR151
CON1
C176
TP3 (TE)
TP1 (RF)
TP2 (VREF)
SFR153
IC151

Note: • Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
• During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.

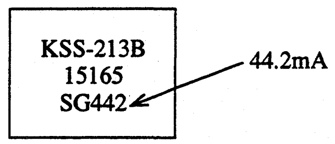

Oscilloscope
(DC range)
TP1 (RF)
TP2 (VREF)
+
−

1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR151 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.


MAX
1.4 ± 0.1 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

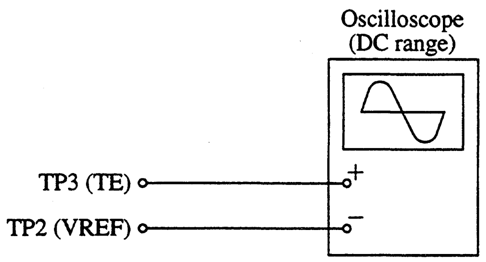
VOLT/DIV: 0.5 V
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R167 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

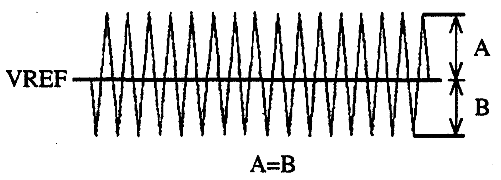

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R167}}{10\Omega}$$

2. Tracking Balance Adjustment


Oscilloscope
(DC range)
TP3 (TE)
TP2 (VREF)
+
−

1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR153 to reduce the tracking gain.
5) Adjust SFR152 so that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
When the gain adjustment is off, the symptoms below appear.

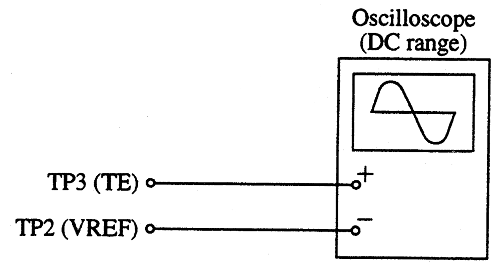
Symptoms \ Gain	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP→▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP→▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

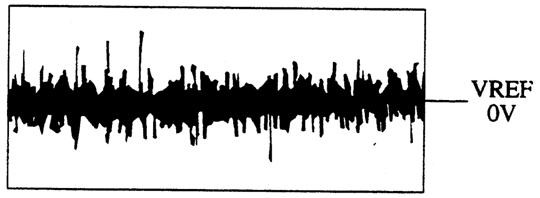
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



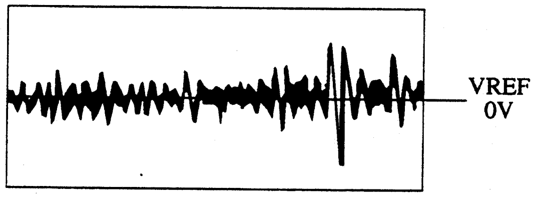
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD C.B.
4) Adjust SFR153 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

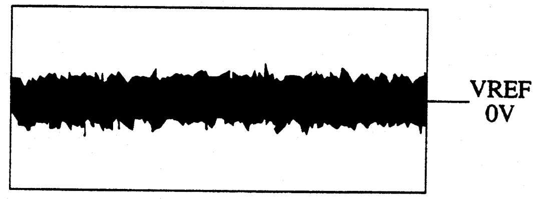
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



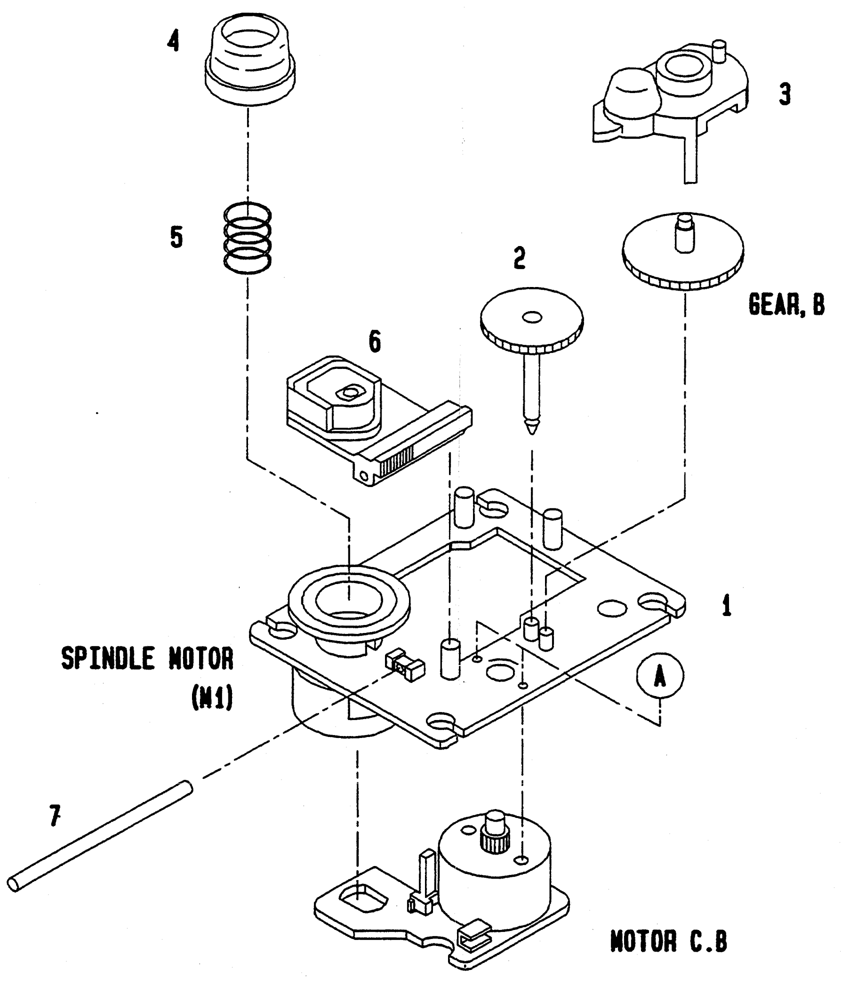
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ⁄ 1 (KSM-2131BAM <A, B>)



CD MECHANISM PARTS LIST 1 ⁄ 1 (KSM-2131BAM <A, B>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	- - -		MOTOR CHASSIS ASSY
2	92-625-188-020		GEAR(A)
3	92-625-544-010		COVER
4	92-625-186-020		RING CENTER C
5	92-625-191-010		SPRING COMPRESSION

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
6	87-070-445-010		OPTICAL PICK UP KSS-213B
7	94-917-565-010		SHAFT SLED
A	87-261-032-210		V+2-3

4ZG-1B

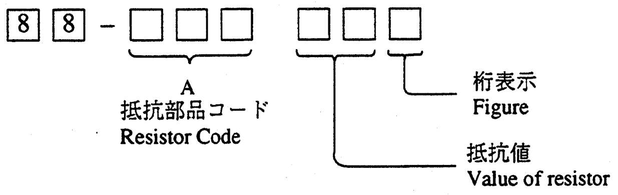
ELECTRICAL MAIN PARTS LIST

DESCRIPTION で判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

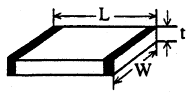
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-336-019		IC,TC 9284 BF
	87-002-407-019		IC TA8191F
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-297-089		C-TR,DTA144TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-026-239-089		C-TR,DTC114TK<G>
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C101	87-015-819-089		CHIP CAP 0.01
C102	87-015-819-089		CHIP CAP 0.01
C103	87-015-676-089		CAP,E 47-6.3 7L
C104	87-015-676-089		CAP,E 47-6.3 7L
C106	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-404-089		CAP,E 4.7-50 SME
C108	87-010-197-089		C-CAP,S 0.01-25 B
C109	87-010-248-049		CAP,E 220-10 SME
C110	87-010-263-049		CAP,E 100-10
C111	87-010-309-089		C-CAP,1000P-50 CH
C112	87-010-197-089		C-CAP,S 0.01-25 B
C113	87-010-184-089		C-CAP,S 3300P-50 B
C114	87-010-060-049		CAP,E 100-16 7L
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-197-089		C-CAP,S 0.01-25 B
C117	87-010-322-089		C-CAP,S 100P-50 CH
C120	87-010-314-089		C-CAP,S 22P-50 CH
C121	87-010-314-089		C-CAP,S 22P-50 CH
C123	87-010-197-089		C-CAP,S 0.01-25 B
C124	87-010-184-089		C-CAP,S 3300P-50 B
C125	87-010-805-089		C-CAP,S 1-16F
C126	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C127	87-010-196-089		C-CAP,S 0.1-25 F
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-154-089		C-CAP,S 10P-50 CH
C154	87-010-322-089		C-CAP,S 100P-50 CH
C155	87-010-263-089		CAP,E 100-10 SME 5X11
C156	87-010-197-089		C-CAP,S 0.01-25 B
C157	87-012-141-089		C-CAP,S 0.22-16 F
C158	87-010-545-049		CAP E 0.22-50 SME
C159	87-015-683-080		CAP,E 33-16 7L
C160	87-010-193-089		C-CAP,S 0.033-25 F
C161	87-010-197-089		C-CAP,S 0.01-25 B
C162	87-010-248-089		CAP,E 220-10 SME
C163	87-010-260-089		CAP,E 47-25 SME
C164	87-010-403-089		CAP,E 3.3-50 SME
C165	87-010-213-089		C-CAP,S 0.015-25 B
C166	87-010-187-089		C-CAP,S 5600P-50 B
C167	87-012-365-089		C-CAP,S 0.027-25V BK
C168	87-010-189-089		C-CAP,S 8200P-50 B
C169	87-015-883-089		C-CAP 0.022-25BK
C170	87-010-320-089		C-CAP,S 68P-50 CH
C171	87-010-382-089		CAP,E 22-25 SME
C172	87-010-197-089		C-CAP,S 0.01-25 B
C173	87-010-263-089		CAP,E 100-10 SME 5X11
C174	87-010-178-089		C-CAP,S 1000P-50 B
C175	87-010-805-089		C-CAP,S 1-16F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	.87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-403-089		CAP,E 3.3-50 SME<G>
C824	87-018-134-089		CAP,TC-U 0.01-16 Y
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R184	87-022-361-089		C-RES,S 47K-1/10W F
R185	87-022-361-089		C-RES,S 47K-1/10W F
R186	87-022-361-089		C-RES,S 47K-1/10W F
R187	87-022-361-089		C-RES,S 47K-1/10W F
R188	87-022-361-089		C-RES,S 47K-1/10W F
R189	87-022-361-089		C-RES,S 47K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-176-089		SFR,100K DIA6 V
SFR152	87-024-171-089		SFR 4.7K DIA6 V
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V
MOTOR C.B			
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

- **IC DESCRIPTION**

  LC7872E.. See page 62

- **MECHANICAL EXPLODED VIEW 1／1**

  See page 95

- **MECHANICAL PARTS LIST 1／1**

  See page 96

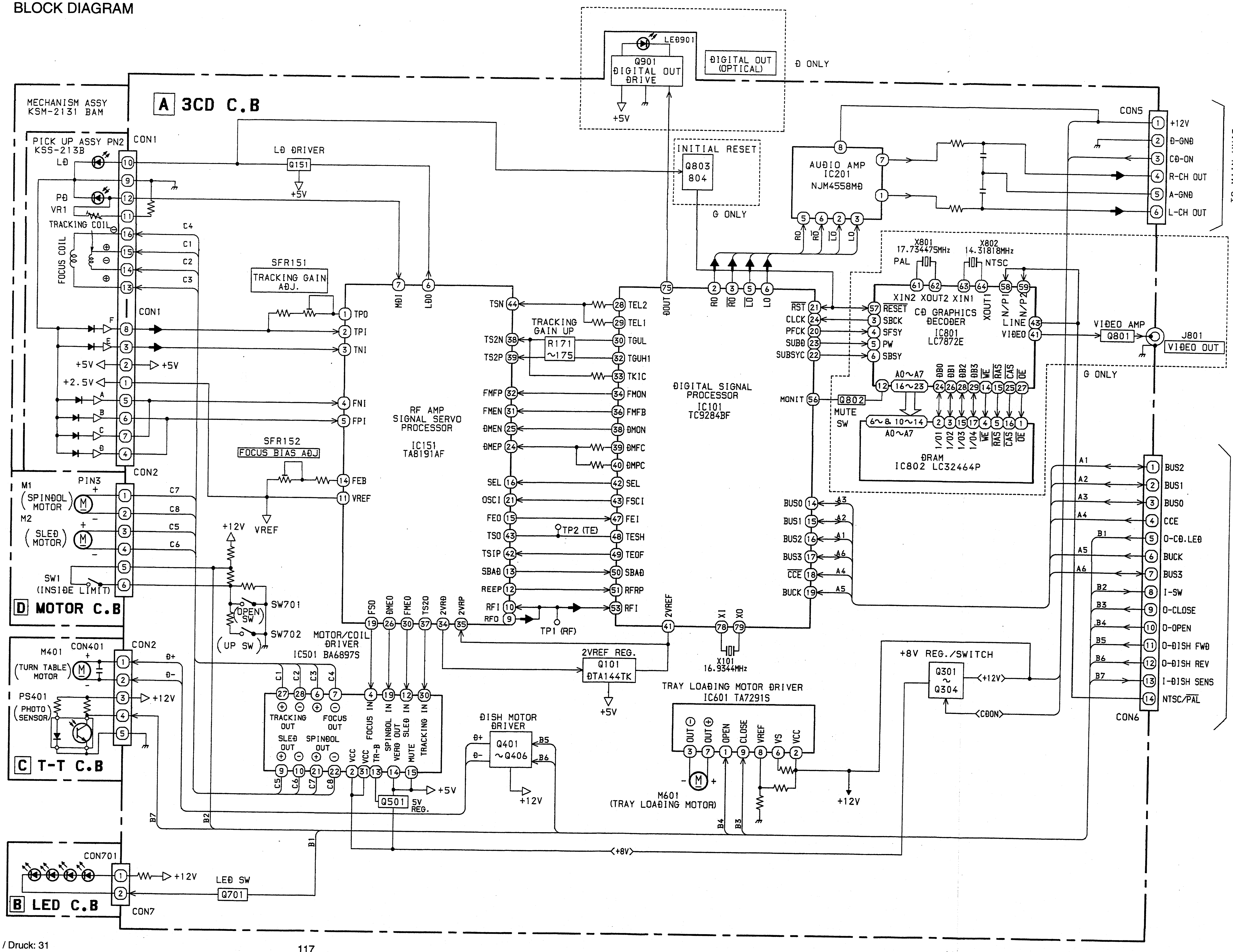
- **CD MECHANISM EXPLODED VIEW 1／1**

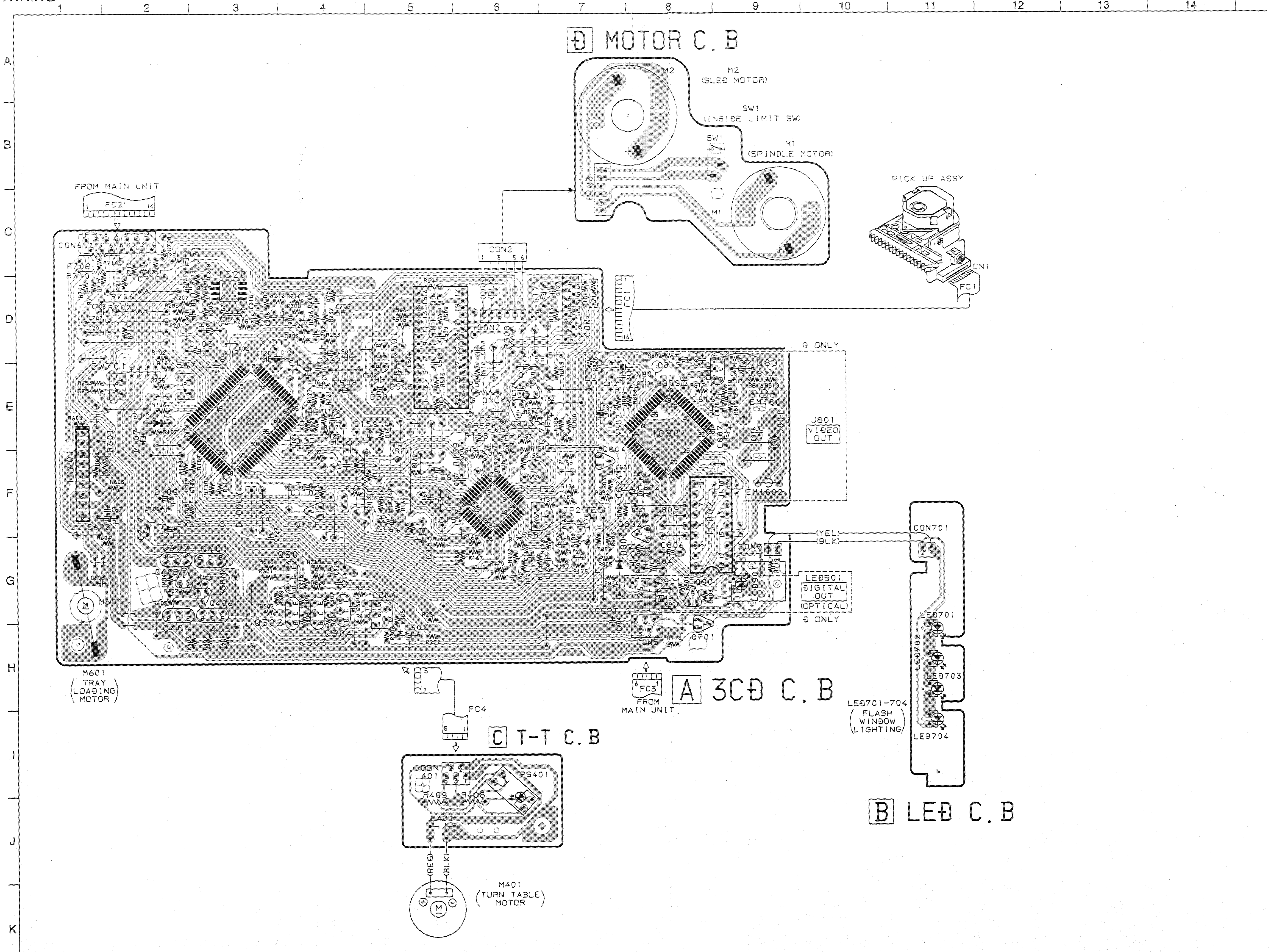
  See page 114

- **CD MECHANISM PARTS LIST 1／1**

  See page 114

BLOCK DIAGRAM


A 3CD C.B
MECHANISM ASSY KSM-2131 BAM
PICK UP ASSY PN2 KSS-213B
LD
PD
VR1
TRACKING COIL
FOCUS COIL
CON1
CON2
LD DRIVER
Q151
+5V
SFR151
TRACKING GAIN ADJ.
SFR152
FOCUS BIAS ADJ
RF AMP SIGNAL SERVO PROCESSOR
IC151 TA8191AF
TRACKING GAIN UP
R171 ~175
DIGITAL SIGNAL PROCESSOR
IC101 TC9284BF
Q901 DIGITAL OUT DRIVE
LED901
DIGITAL OUT (OPTICAL)
D ONLY
INITIAL RESET
Q803 804
G ONLY
AUDIO AMP IC201 NJM4558MD
CON5
+12V
D-GND
CD-ON
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
X801 17.734475MHz
X802 14.31818MHz
PAL
NTSC
CD GRAPHICS DECODER
IC801 LC7872E
VIDEO AMP
Q801
J801
VIDEO OUT
Q802
MUTE SW
DRAM
IC802 LC32464P
CON6
BUS2
BUS1
BUS0
CCE
O-CD.LED
BUCK
BUS3
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH REV
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
+8V REG./SWITCH
Q301 ~ Q304
TRAY LOADING MOTOR DRIVER
IC601 TA7291S
M601 (TRAY LOADING MOTOR)
2VREF REG.
Q101 DTA144TK
X101 16.9344MHz
TP1 (RF)
TP2 (TE)
MOTOR/COIL DRIVER
IC501 BA6897S
TRACKING OUT
FOCUS OUT
SLED OUT
SPINDOL OUT
Q501 5V REG.
DISH MOTOR DRIVER
Q401 ~Q406
D MOTOR C.B
M1 (SPINDOL MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
SW701
SW702
(OPEN SW)
(UP SW)
C T-T C.B
M401 (TURN TABLE MOTOR)
PS401 (PHOTO SENSOR)
CON401
B LED C.B
CON701
CON7
LED SW
Q701


1
2
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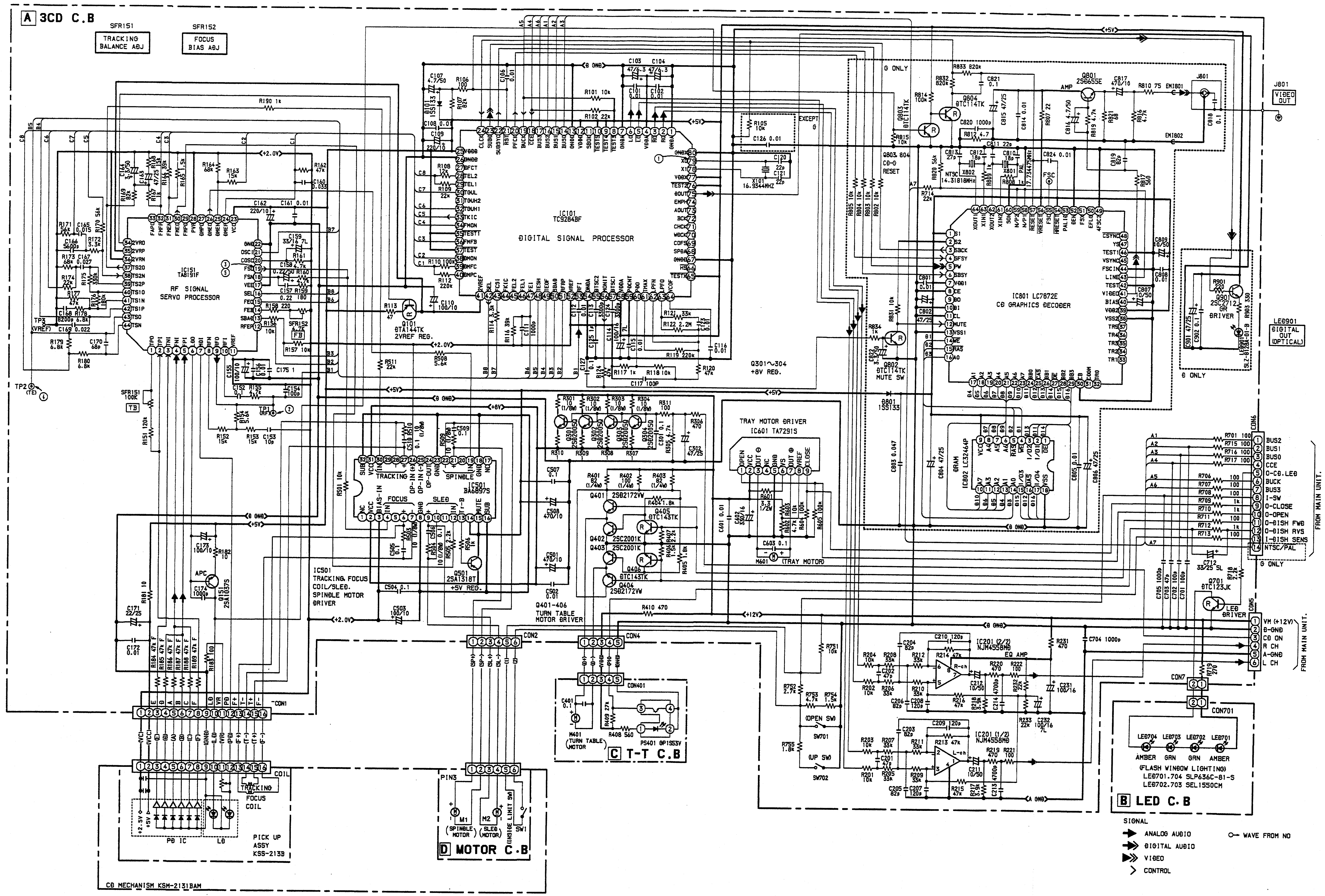
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
D MOTOR C.B
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
SW1
M1 (SPINDLE MOTOR)
M1
M2
PIN3
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
CON1
IC201
IC101
IC501
IC801
IC802
IC151
IC601
X101
X801
SW701
SW702
D101
Q501
Q151
Q801
Q802
Q803
Q804
Q101
Q301
Q302
Q303
Q304
Q401
Q402
Q403
Q404
Q405
Q406
Q701
Q901
EMI801
EMI802
G ONLY
J801 VIDEO OUT
EXCEPT G
TP2 (TE)
TP3 (VREF)
(RF)
SFR151
SFR152
CON7
(YEL)
(BLK)
CON701
LED901
LED901 DIGITAL OUT (OPTICAL)
CON4
CON5
M601
M601 (TRAY LOADING MOTOR)
FC3
FROM MAIN UNIT.
A 3CD C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LED C.B

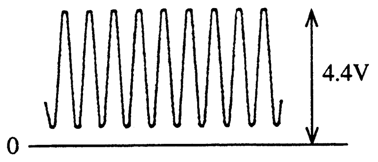
SCHEMATIC DIAGRAM


A 3CD C.B
SFR151 TRACKING BALANCE ADJ
SFR152 FOCUS BIAS ADJ
IC151 TA8191F RF SIGNAL SERVO PROCESSOR
IC101 TC9284BF DIGITAL SIGNAL PROCESSOR
X101 16.9344MHZ
Q101 DTA144TK 2VREF REG.
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC3244AP DRAM
X801 17.734475MHz PAL
X802 NTSC 14.31818MHz
Q801 2SC2655E AMP
Q803 DTC114TK
Q804 DTC114TK
Q803, 804 CD-G RESET
Q802 DTC114TK MUTE SW
D801 1SS133
G ONLY
EXCEPT G
FSC
J801 VIDEO OUT
EM1801
EM1802
Q901 2SC2712 GR DRIVER
LE0901 DIGITAL OUT (OPTICAL)
D ONLY
Q301~304 +8V REG.
TRAY MOTOR DRIVER IC601 TA7291S
M601 (TRAY MOTOR)
IC501 BA6897S
IC501 TRACKING, FOCUS COIL/SLED, SPINDLE MOTOR DRIVER
Q501 2SA1318T +5V REG.
Q151 2SA1037S APC
Q401-406 TURN TABLE MOTOR DRIVER
Q401 2SB2172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SB2172VW
Q405 DTC143TK
Q406 DTC143TK
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
Q701 DTC123JK LED DRIVER
CON1
CON2
CON4
CON5
CON6
CON7
CON401
CON701
BUS2
BUS1
BUS0
CCE
D-CD.LED
BUCK
BUS3
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
G ONLY
FROM MAIN UNIT.
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT.
(OPEN SW) SW701
(UP SW) SW702
M401 (TURN TABLE) MOTOR
PS401 DP1553V
C T-T C.B
TRACKING COIL
FOCUS COIL
PD IC
LD
PICK UP ASSY KSS-213D
CD MECHANISM KSM-2131BAM
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D MOTOR C.B
LED0704 LED0703 LED0702 LED0701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED0701.704 SLP636C-81-S
LED0702.703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO

WAVE FORM

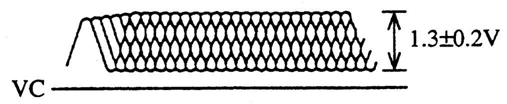
① SYSTEM CLOCK
IC101 Pin (79) (XO)
f=16.9344MHz

VOLT/DIV: 2V
TIME/DIV: 0.1µS



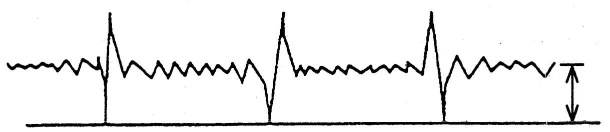
② RF
TP1 (RF)

VOLT/DIV: 500mV
TIME/DIV: 0.5µS



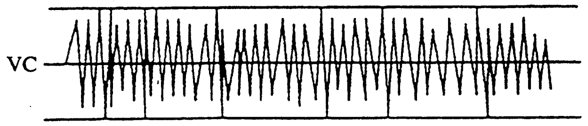
③ Focus
IC151 Pin ⑲ (FSO)

VOLT/DIV: 200mV
TIME/DIV: 2mS

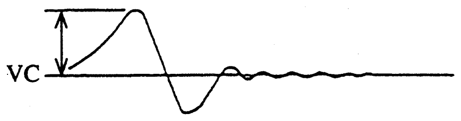


④ Tracking
TP2 (TE)

TIME/DIV: 1mS

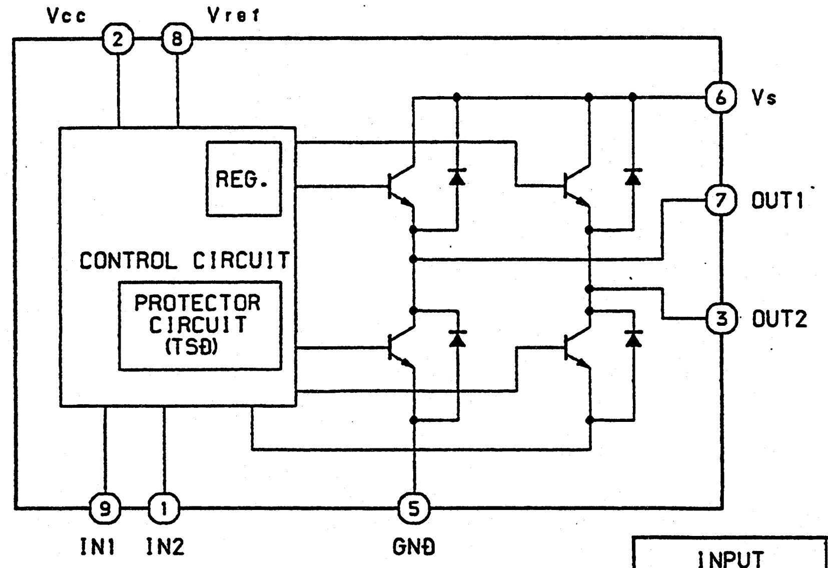


⑤ Focus Search
IC151 Pin ⑲ (FSO)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, TC9284BF

Pin No.	Pin name	I/O	Description
1	GNDA	—	D/A converter R-channel analog GND.
2	RO	O	R-channel data positive output.
3	$\overline{\text{RO}}$	O	R-channel data inverted output.
4	VDA	—	D/A converter power supply.
5	$\overline{\text{LO}}$	O	L-channel data inverted output.
6	LO	O	L-channel data positive output.
7	GNDA	—	D/A converter L-channel analog GND.
8~10	$\overline{\text{TEST3}}$~$\overline{\text{TEST5}}$	I	TEST pin. Normally "H" or open.
11	SBOK	O	Sub code Q data CRCC judgment result output. Judgment result OK: H
12	VDDD	—	Digital power supply. (+5 V)
13	GNDD	—	Digital GND.
14~17	BUS0~BUS3	I/O	µprocessor interface, data input/output.
18	CCE	I	µprocessor interface, chip enable signal input. When "L" : BUS 3~0 are active
19	BUCK	I	µprocessor interface, clock input.
20	PFCK	O	PB frame sync output.
21	$\overline{\text{RST}}$	I	Reset signal input. "L" at reset.
22	SUBSYC	O	Sub code block sync output. When sub code is detected,"H" at S1 position.
23	SUBD	O	Sub code P~W output.
24	CLCK	I	Sub code P~W data read clock input.
25	VDDD	—	Digital power supply. (+5 V)
26	GNDD	—	Digital GND.
27	DFCT	O	Defect detection signal output. When defect is detected: "VREF", normally "HiZ".
28	TEL2	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
29	TEL1	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
30	TGUL	O	Analog switch output for tracking servo gain up. Polarity in gain-up mode and normal mode can be selected by command.
31	TGUH2	O	Analog switch output for tracking servo gain up. "HiZ" for gain-up, normally "VREF". TGUH1 during normal playback. TGUH2: not used
32	TUGH1	O	
33	TKIC	O	Tracking actuator kick signal output. NKICx and CKICx are used for kick during tracking gain adjustment. "VREF" for outermost track."O" for moving toward inner track. Normally "HiZ".
34	FMON	O	Analog switch output to turn ON/OFF the feed servo. "HiZ" to turn ON servo. "VREF" to turn OFF servo.
35	$\overline{\text{TEST1}}$	I	TEST pin. Normally "H" or open.
36	FMFB	O	Feed motor FWD/BWD direction control signal output."2VREF" for outmost track. "O" for moving toward inner track. Normally "HiZ".
37	$\overline{\text{TEST}}$	I	TEST pin. Normally "H" or open.
38	DMON	O	Analog switch output to select gain of the disc motor drive circuit. "HiZ" for CLV servo OFF, "HiZ" or "VREF" can be selected by command.

<table>
<tr><th>Pin No.</th><th>Pin name</th><th>I/O</th><th>Description</th></tr>
<tr><td>39</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo AFC signal output.
<table>
<tr><th>Operation</th><th>Command</th><th>DMFC output</th></tr>
<tr><td>Motor acceleration</td><td>DMFK</td><td>“2VREF”</td></tr>
<tr><td>CLV servo ON</td><td>DMSV</td><td>AFC signal (PWM)</td></tr>
<tr><td>Motor brake</td><td>DMBK</td><td>“L”</td></tr>
<tr><td>CLV servo OFF</td><td>DMOFF</td><td>“VREF”</td></tr>
</table></td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo APC signal output.</td></tr>
<tr><td>41</td><td>2VREF</td><td>—</td><td>Analog power supply. (twice the “VREF” voltage)</td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode select output. It turns ON/OFF the laser diode (LD) and focus servo.
<table>
<tr><th>SEL output</th><th>LD</th><th>Focus servo</th><th>Operating mode</th></tr>
<tr><td>“L”</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr>
<tr><td>“HiZ”</td><td>ON</td><td>OFF</td><td>Focus search</td></tr>
<tr><td>“H”</td><td>ON</td><td>ON</td><td>Focus ON (normal play)</td></tr>
</table></td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output during focus search mode. “VDDA” to move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>44</td><td>FKIC</td><td>O</td><td>Focus actuator drive signal output during focus adjustment mode.ÅgVDDAÅhto move the lens far from disc. “L” to move the lens closer to disc. Normally “HiZ”.</td></tr>
<tr><td>45, 46</td><td>FEL1, FEL2</td><td>O</td><td>Focus gain adjustment analog switch output. “VREF” or “HiZ”.</td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td>Focus error signal input.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td>Analog switch input to track error signal sample-and-hold.</td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td>Focus gain adjustment analog switch output.“VREF” when tracking servo off.</td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td>Sub beam added signal input.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td>RF ripple signal input.</td></tr>
<tr><td>52</td><td>VREF</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td>RF signal input.</td></tr>
<tr><td>54</td><td>GNDA</td><td>—</td><td>Analog GND.</td></tr>
<tr><td>55</td><td>DTSC2</td><td>O</td><td>Data slice control EFM signal inverted output.</td></tr>
<tr><td>56</td><td>MONI T</td><td>O</td><td>Internal signal monitored output. EFMO, PLCK or LOCK signals can be selected by command. Can be muted. (Not used)</td></tr>
<tr><td>57</td><td>DTSC 1</td><td>O</td><td>Data slice control EFM signal positive polarity output.</td></tr>
<tr><td>58</td><td>VDDA</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td>PDO output control signal input. “L” to fix to “HiZ” forcibly. “H” : normal output.</td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td>Phase error signal between EFM and PLCK signals is output.</td></tr>
<tr><td>61</td><td>TMAX</td><td>O</td><td>TMAX detected result output.
<table>
<tr><th>TMAX detected result</th><th>TMAX output</th></tr>
<tr><td>Longer than specified cycle</td><td>“L”</td></tr>
<tr><td>Shorter than specified cycle</td><td>“VREF”</td></tr>
<tr><td>Within specified cycle</td><td>“HiZ”</td></tr>
</table></td></tr>
<tr><td>62</td><td>LPFN</td><td>I</td><td>Low-pass filter amplifier inverted input.</td></tr>
</table>

Pin No.	Pin name	I/O	Description
63	LPFO	O	Low-pass filter amplifier output.
64	VCOF	O	VCO filter output.
65	TESTX	I	TEST pin. Normally “H” or “L” .(Connected to +5 V)
66	$\overline{\text{HS}}$	O	Double speed mode output. “H” : normal speed. “L” : double speed
67	GNDD	—	Digital GND.
68	SPDA	O	Processor status signal output.
69	COFS	O	Correction circuit frame clock (7.35 kHz) output.
70	WDCK	O	Word clock (88.2 kHz) output. SUBQ, BUF0V or 1PF can be selected by the µprocessor command. (Not used)
71	CHCK	O	Channel clock (44.1 kHz) output. “L”for L-channel. “H” for R-channel.
72	BCK	O	Bit clock (1.4112 MHz) output.
73	AOUT	O	Audio data output. (Not used)
74	EMPH	O	Emphasis ON/OFF select signal. “H” : emphasis ON. “L” for emphasis OFF
75	DOUT	O	DIGITAL SIGNAL output.
76	$\overline{\text{TEST2}}$	I	TEST pin. Normally “H”.
77	VDDX	—	Crystal oscillator circuit power supply.
78	XI	I	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
79	XO	O	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
80	GNDX	—	Crystal oscillator GND.

IC, TA8191F

Pin No.	Pin Name	I/O	Description
1	TPO	O	Sub beam I-V amplifier (TA Amp) output terminal.
2	TPI	I	Sub beam I-V amplifier (TA Amp) input terminal.
3	TNI	I	Sub beam I-V amplifier (TA Amp) input terminal.
4	FNI	I	Main beam I-V amplifier (FN Amp) input terminal.
5	FPI	I	Main beam I-V amplifier (FP Amp) input terminal.
6	LDO	O	Laser diode amplifier (LD Amp) output terminal.
7	MDI	I	Monitor photo diode amplifier (MD Amp) input terminal.
8	RFN	I	RF amplifier reversed phase input terminal.
9	RFO	O	RF amplifier output terminal.
10	RFI	I	RF ripple signal generator circuit input terminal.
11	VREF	O	Reference voltage output terminal (+2.1 V).
12	RFRP	O	RF ripple signal output terminal.
13	SBAD	O	Scar detection signal output terminal.
14	FEB	I	Focus error balance adjustment input terminal.
15	FEO	O	Focus error amplifier (FE Amp) output terminal.
16	SEL	I	Analog switch control signal input terminal.
17	VEE	—	Power supply terminal. (TA8190F; -5 V, TA8191F; GND)
18	FSN	I	Focus output amplifier (FS Amp) reversed phase input terminal.
19	FSO	O	Focus output amplifier (FS Amp) output terminal.
20	COSC	O	External capacitor to generate focus search signal is connected to this terminal.
21	OSCI	I	External input to control the built-in power supply to generate focus search signal is connected to this terminal.
22	GND	—	GND.
23	VCC	I	Power supply terminal (+5 V).
24	DMEP	I	Disc motor amplifier (DM Amp) positive phase input terminal.
25	DMEN	I	Disc motor amplifier (DM Amp) reversed phase input terminal.
26	DMEO	O	Disc motor amplifier (DM Amp) output terminal.
27	DMPO	O	Disc motor drive amplifier (DMP Amp) output terminal. (Not used).
28	PVR	I	Drive amplifier reference voltage input terminal.
29	FMPO	O	Feed motor drive amplifier (FMP Amp) output terminal. (Not used).
30	FMEO	O	Feed motor amplifier (FM Amp) output terminal.
31	FMEN	I	Feed motor amplifier (FM Amp) reversed phase input terminal.
32	FMEP	O	Feed motor amplifier (FM Amp) positive phase input terminal.
33	FAPO	O	Focus actuator drive amplifier (FAP Amp) output terminal. (Not used).
34	2VRO	I	2 V REF amplifier (2 V REF Amp) output terminal.
35	2VRP	I	2 V REF amplifier (2 V REF Amp) positive phase input terminal.
36	2VRN	I	2 V REF amplifier (2 V REF Amp) reversed phase input terminal.
37	TS2O	O	Tracking servo amplifier 2 (TS2 Amp) output terminal.
38	TS2N	I	Tracking servo amplifier 2 (TS2 Amp) reversed phase input terminal.
39	TS2P	I	Tracking servo amplifier 2 (TS2 Amp) positive phase input terminal.
40	TS1O	O	Tracking servo amplifier 1 (TS1 Amp) output terminal.
41	TS1N	I	Tracking servo amplifier 1 (TS1 Amp) reversed phase input terminal.
42	TS1P	I	Tracking servo amplifier 1 (TS1 Amp) positive phase input terminal.
43	TSO	O	Tracking output amplifier (TS Amp) output terminal.
44	TSN	I	Tracking output amplifier (TS Amp) reversed phase input terminal.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

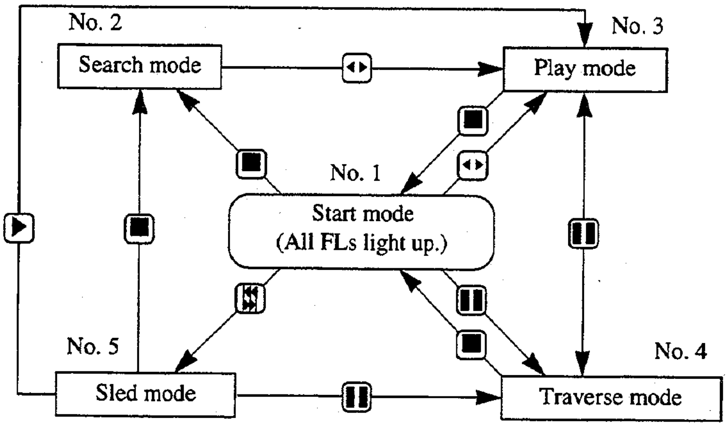
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

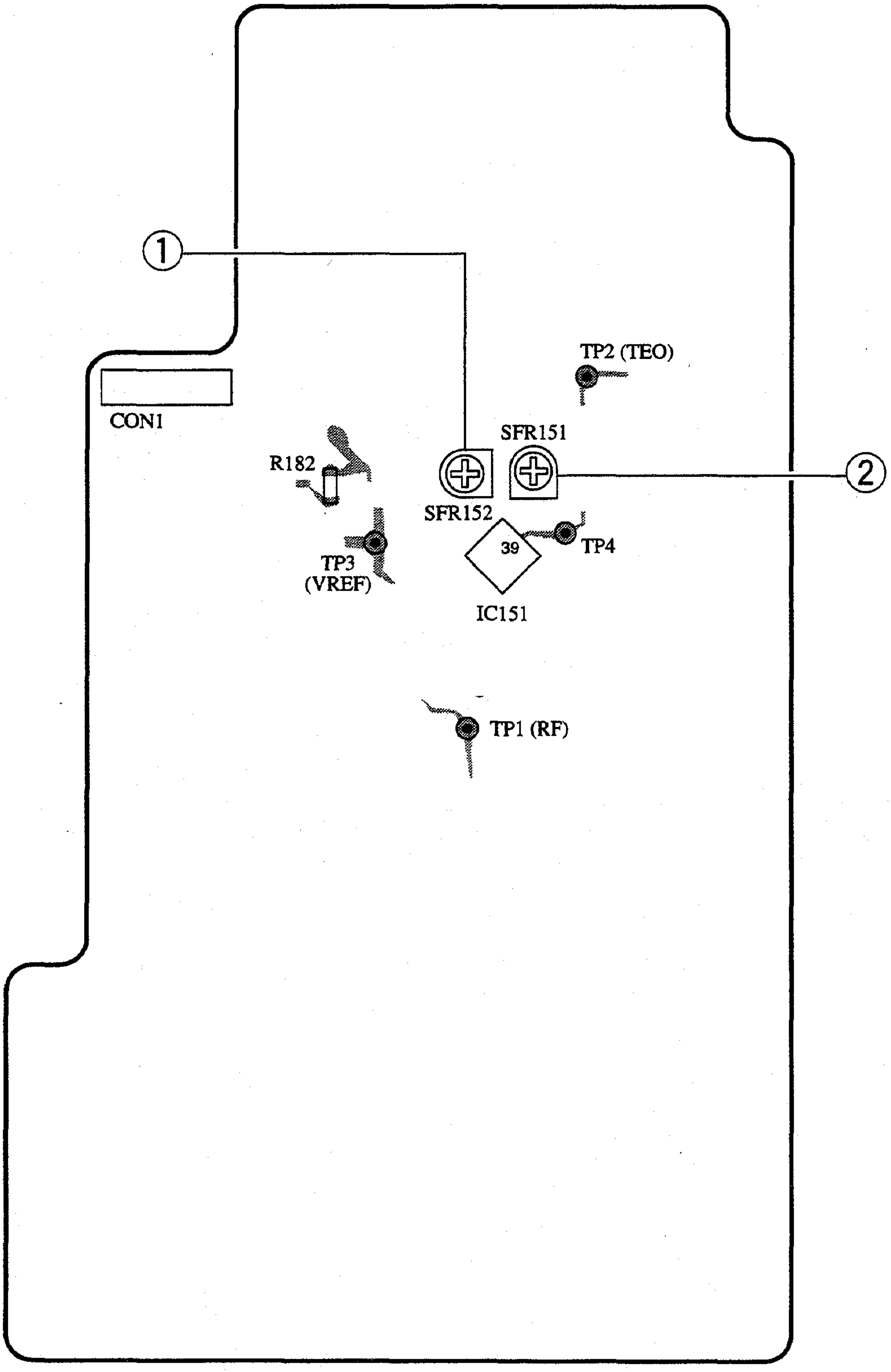
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

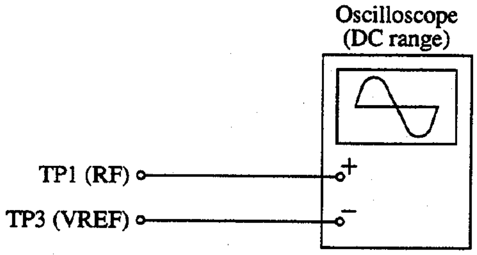
A 3CD C.B (PATTERN SIDE)


①
②
TP2 (TEO)
CON1
SFR151
R182
SFR152
39
TP4
TP3
(VREF)
IC151
TP1 (RF)

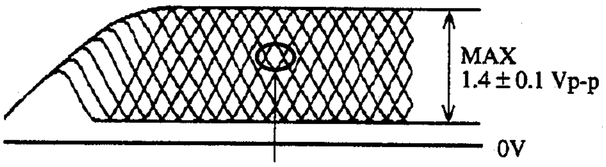
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.



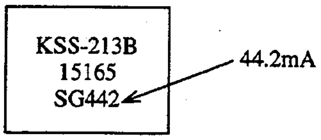
1) Connect an oscilloscope to test points TP1 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR152 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX.

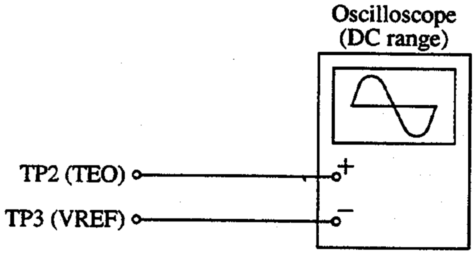
VOLT/DIV: 0.5V
TIME/DIV: 0.5μS

Note : The current of the laser signal can be checked with the voltages on both sides of R182 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

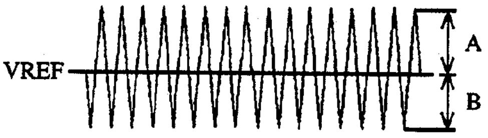


$$\text{Laser current Iop} = \frac{\text{Voltage across R182}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Short circuit between TP3 (VREF) and TP4.
2) Connect an oscilloscope to test points TP2 (TEO) and TP3 (VREF).
3) Turn on the power switch.
4) Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
5) Adjust SFR151 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the test point TP3 (VREF) and TP4.



A=B

VOLT/DIV: 20mV
TIME/DIV: 2mS

4ZG-1Z

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-165-010		C-IC,LA9230M
	87-A20-164-010		C-IC,LC78630E-T
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
TRANSISTOR			
	87-026-463-089		TR, 2SA933S (RS)
	89-406-555-089		TR,2SD655E
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-470-089		TR,HN1C03 F B
	87-026-608-089		C-TR,DTC 123 JK
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C11	87-016-081-089		C-CAP,S 0.1-16 RK
C12	87-012-157-089		C-CAP,S 330P-50 CH
C13	87-016-369-089		C-CAP,S 0.033-25 B K
C14	87-016-081-089		C-CAP,S 0.1-16 RK
C15	87-010-596-089		C-CAP,S 0.047-16 RK
C16	87-010-956-089		C-CAP,S 0.068-25 B
C17	87-010-182-089		C-CAP,S 2200P-50 B
C18	87-016-369-089		C-CAP,S 0.033-25 B K
C19	87-010-213-089		C-CAP,S 0.015-25 B
C20	87-010-178-089		C-CAP,S 1000P-50 B
C21	87-012-393-089		C-CAP,S 0.22-16,R,K
C22	87-016-083-089		C-CAP,S 0.15-16 RK
C23	87-010-197-089		C-CAP,S 0.01-25 B
C24	87-010-186-089		C-CAP,S 4700P-50 B
C25	87-015-694-089		CAP E 0.47-50-7L
C26	87-010-322-089		C-CAP,S 100P-50 CH
C27	87-015-686-089		CAP,E 22-25 7L
C28	87-015-697-089		CAP,E 3.3-50 7L
C29	87-010-184-089		C-CAP,S 3300P-50 B
C30	87-010-146-089		C-CAP,S 2P-50 CH
C31	87-010-186-089		C-CAP,S 4700P-50 B
C32	87-010-148-089		C-CAP,S 4P-50 CH
C33	87-016-081-089		C-CAP,S 0.1-16 RK
C35	87-010-196-089		C-CAP,S 0.1-25 F
C37	87-010-405-089		CAP,E 10-50 SME
C38	87-010-263-089		CAP,E 100-10 SME
C39	87-010-197-089		C-CAP,S 0.01-25 B
C40	87-010-401-089		CAP,E 1-50 SME
C41	87-016-463-089		C-CAP,S 0.33-16 B
C42	87-010-263-089		CAP,E 100-10 SME
C43	87-018-134-089		CAP,TC-U 0.01-16 Y
C44	87-010-263-089		CAP,E 100-10 SME
C46	87-010-196-089		C-CAP,S 0.1-25 F
C47	87-015-684-010		CAP,E 47-16 7L
C48	87-010-196-089		C-CAP,S 0.1-25 F
C50	87-010-197-089		C-CAP,S 0.01-25 B
C51	87-010-263-089		CAP,E 100-10 SME
C101	87-016-081-089		C-CAP,S 0.1-16 RK
C102	87-016-081-089		C-CAP,S 0.1-16 RK
C103	87-012-149-089		C-CAP, S 30P-50 CH
C105	87-010-196-089		C-CAP,S 0.1-25 F
C106	87-010-196-089		C-CAP,S 0.1-25 F
C108	87-010-154-089		C-CAP,S 10P-50 CH
C109	87-010-154-089		C-CAP,S 10P-50 CH
C111	87-010-196-089		C-CAP,S 0.1-25 F
C112	87-010-404-089		CAP,E 4.7-50 SME
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-263-089		CAP,E 100-10 SME
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-010-318-089		C-CAP,S 47P-50 CH
C208	87-010-318-089		C-CAP,S 47P-50 CH
C209	87-010-318-089		C-CAP,S 47P-50 CH
C210	87-010-318-089		C-CAP,S 47P-50 CH
C211	87-010-403-089		CAP,E 3.3-50 SME
C212	87-010-403-089		CAP,E 3.3-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C215	87-010-555-049		CAP,E 100-10 GAS
C216	87-010-384-089		CAP,E 100-25 SME
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-089		CAP,E 470-10 11L
C502	87-010-197-089		C-CAP,S 0.01-25 B
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-322-089		C-CAP,S 100P-50 CH
C704	87-010-322-089		C-CAP,S 100P-50 CH
C705	87-018-131-089		CAP,TC-U 1000P-50 B
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
FC5	84-ZG1-630-019		CABLE FFC 6P-1.25
L11	87-003-102-089		COIL,10UH
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-383-019		MOT,M9I T2
R102	87-022-345-089		C-RES,S 1.2K-1/10W F
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR, (BCH3B14)
PS401	87-026-573-019		P-SNSR, GP1S53V
DRIVE C.B			
M1	87-045-358-019		MOT, RF-310TA 43
M2	87-045-356-019		MOT, RF-310TA 30
SW1	87-A90-042-019		SW, LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

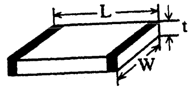
8 8 – □□□ □□□

A
抵抗部品コード
Resistor Code

抵抗値
Value of resistor

桁表示
Figure

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code: A
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

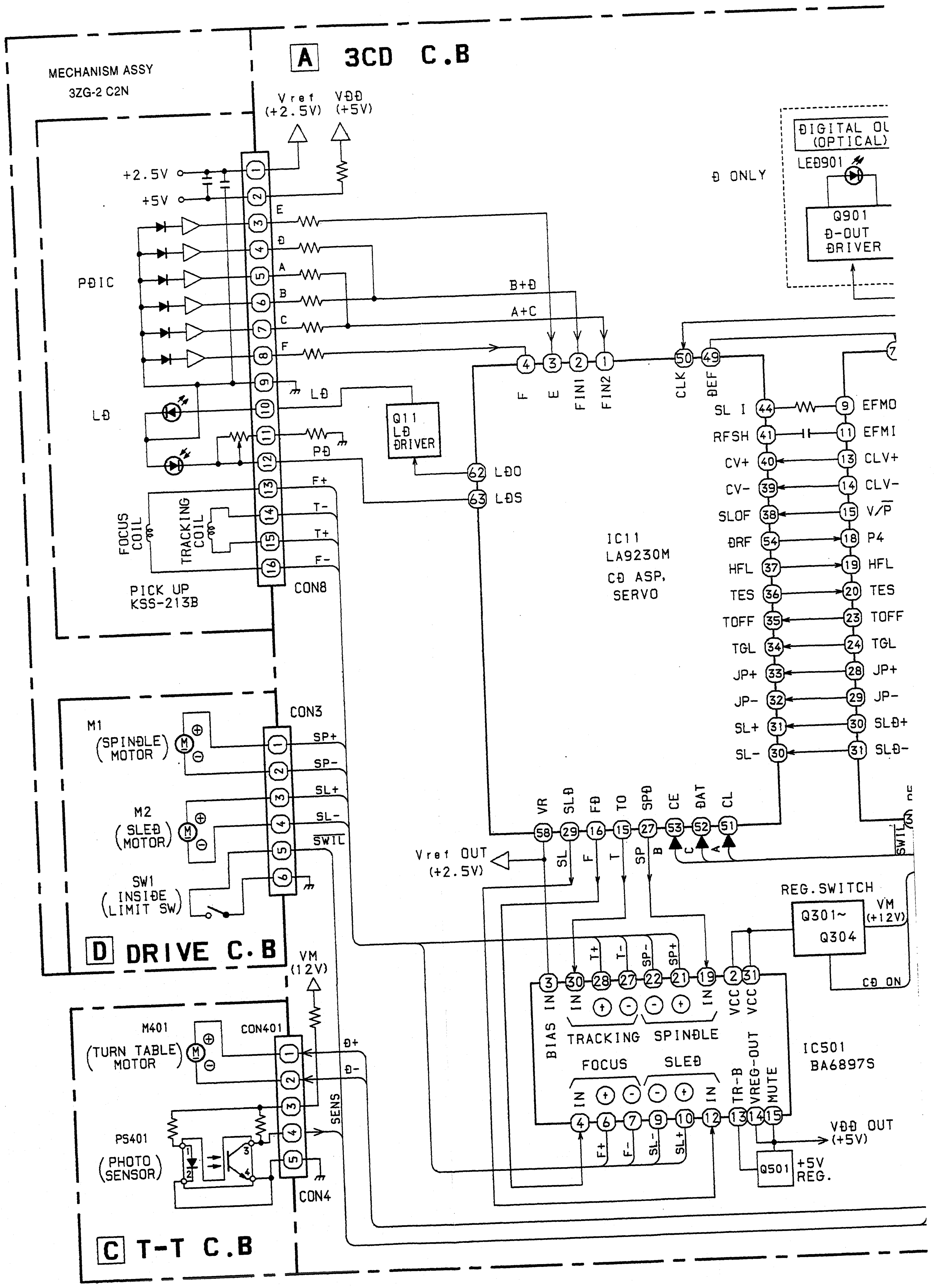
- ■ MECHANICAL EXPLODED VIEW 1／1

  See page 95

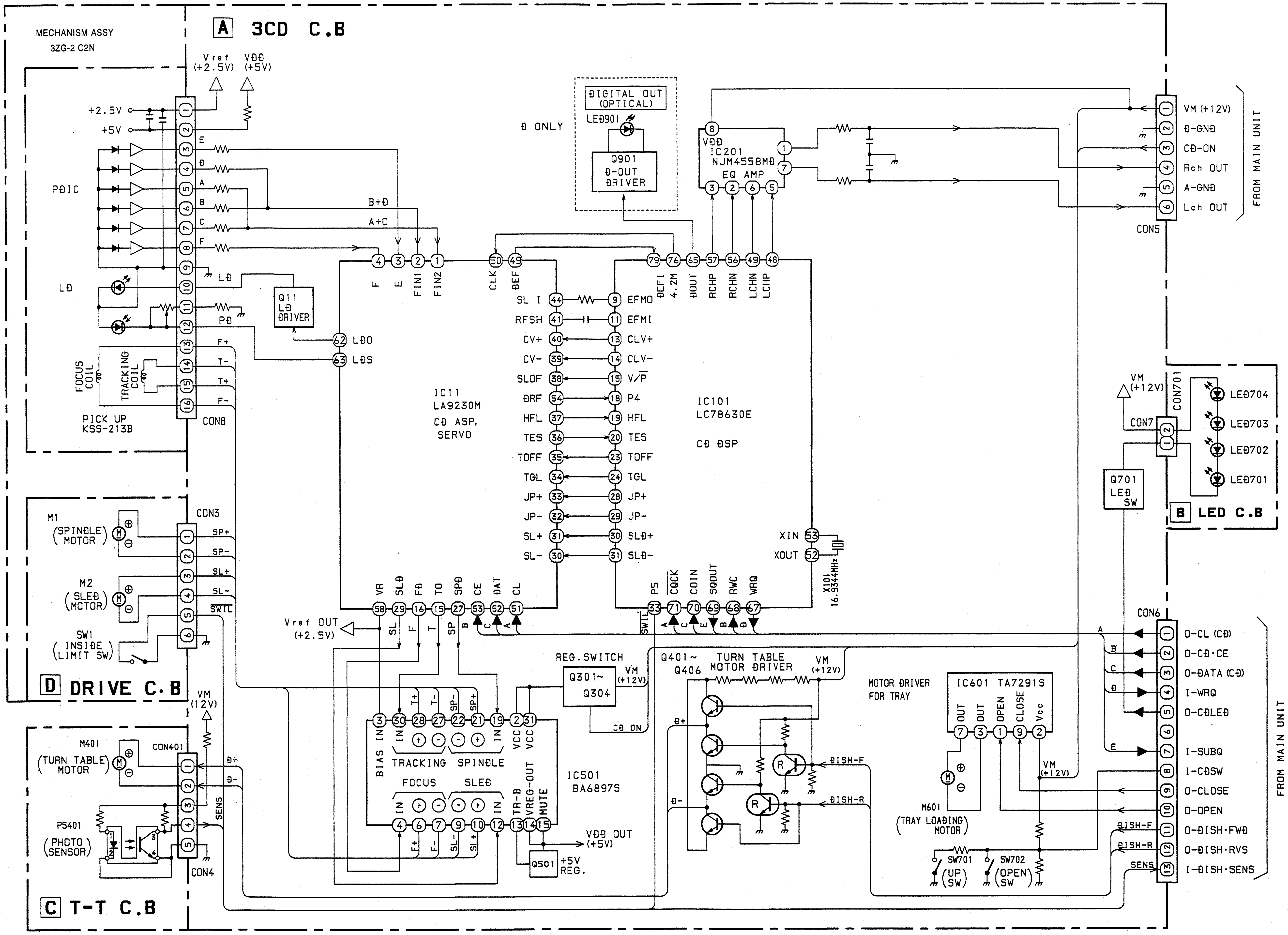
- ■ MECHANICAL PARTS LIST 1／1

  See page 96

BLOCK DIAGRAM


A 3CD C.B
MECHANISM ASSY
3ZG-2 C2N
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
E
D
A
B
C
F
LD
PD
B+D
A+C
Q11
LD
DRIVER
FOCUS COIL
TRACKING COIL
PICK UP
KSS-213B
CON8
F+
T-
T+
F-
62 LDO
63 LDS
IC11
LA9230M
CD ASP,
SERVO
F E FIN1 FIN2
CLK DEF
DIGITAL OUT
(OPTICAL)
LED901
D ONLY
Q901
D-OUT
DRIVER
SL I
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
HFL
TES
TOFF
TGL
JP+
JP-
SLD+
SLD-
VR SLD FD TO SPD CE DAT CL
SL F T SP B C A
Vref OUT
(+2.5V)
SWIL
CON3
M1
SPINDLE MOTOR
M2
SLED MOTOR
SW1
INSIDE LIMIT SW
SP+
SP-
SL+
SL-
SWIL
D DRIVE C.B
VM
(12V)
M401
TURN TABLE MOTOR
CON401
PS401
PHOTO SENSOR
D+
D-
SENS
CON4
C T-T C.B
REG.SWITCH
Q301~
Q304
VM
(+12V)
CD ON
T+ T- SP- SP+
BIAS IN
IN
TRACKING
SPINDLE
IN
VCC
VCC
FOCUS
SLED
IN
IN
TR-B
VREG-OUT
MUTE
F+ F- SL- SL+
IC501
BA6897S
VDD OUT
(+5V)
Q501
+5V
REG.

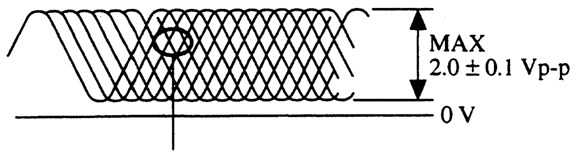
BLOCK DIAGRAM



MECHANISM ASSY
3ZG-2 C2N
A 3CD C.B
Vref (+2.5V)
VDD (+5V)
PDIC
LD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213B
CON8
D ONLY
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
IC201 NJM4558MD EQ AMP
Q11 LD DRIVER
LDO
LDS
IC11 LA9230M CD ASP, SERVO
IC101 LC78630E CD DSP
X101 16.9344MHz
XIN
XOUT
CON5
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
FROM MAIN UNIT
CON701
CON7
LED704
LED703
LED702
LED701
Q701 LED SW
B LED C.B
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
FROM MAIN UNIT
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
D DRIVE C.B
Vref OUT (+2.5V)
REG.SWITCH Q301~Q304
CD ON
IC501 BA6897S
TRACKING SPINDLE FOCUS SLED
VDD OUT (+5V)
Q501 +5V REG.
Q401~Q406 TURN TABLE MOTOR DRIVER
VM (+12V)
DISH-F
DISH-R
MOTOR DRIVER FOR TRAY
IC601 TA7291S
M601 (TRAY LOADING MOTOR)
SW701 (UP SW)
SW702 (OPEN SW)
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
CON4
VM (12V)
C T-T C.B

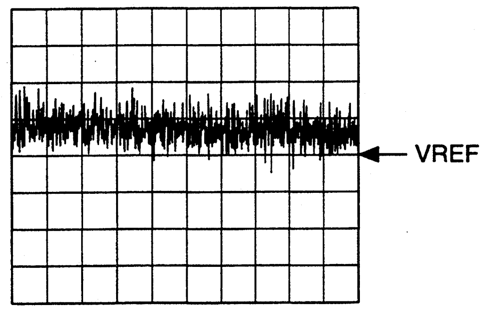
WAVE FORM

① IC11 Pin ㊶ (RFSM) VOLT/DIV: 0.5V TIME/DIV: 1µS

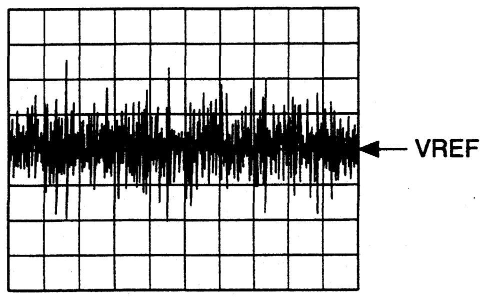

MAX
2.0 ± 0.1 Vp-p
0 V

EYE PATTERN
must be CLEAR and MAX.

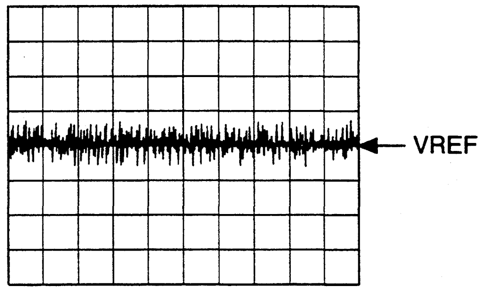
② IC11 Pin ⑯ (FD) VOLT/DIV: 100mV TIME/DIV: 1mS



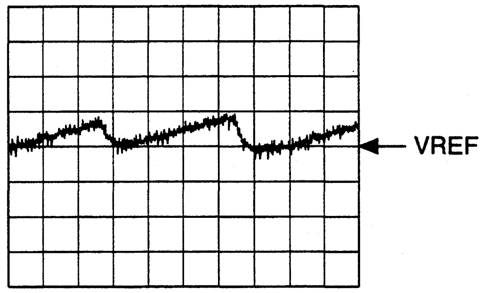
③ IC11 Pin ⑮ (TO) VOLT/DIV: 100mV TIME/DIV: 1mS



④ IC11 Pin ㉗ (SPD) VOLT/DIV: 100mV TIME/DIV: 1mS

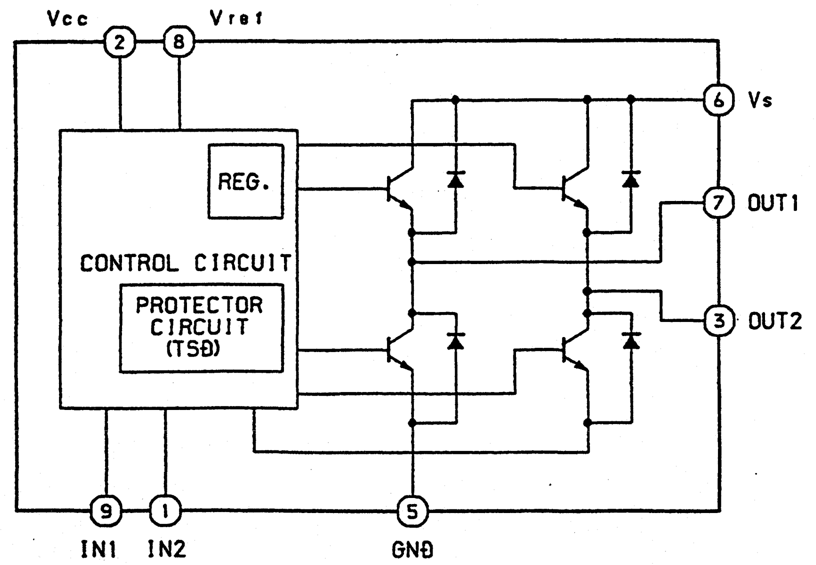


⑤ IC11 Pin ㉙ (SLD) VOLT/DIV: 200mV TIME/DIV: 2S



IC BLOCK DIAGRAM

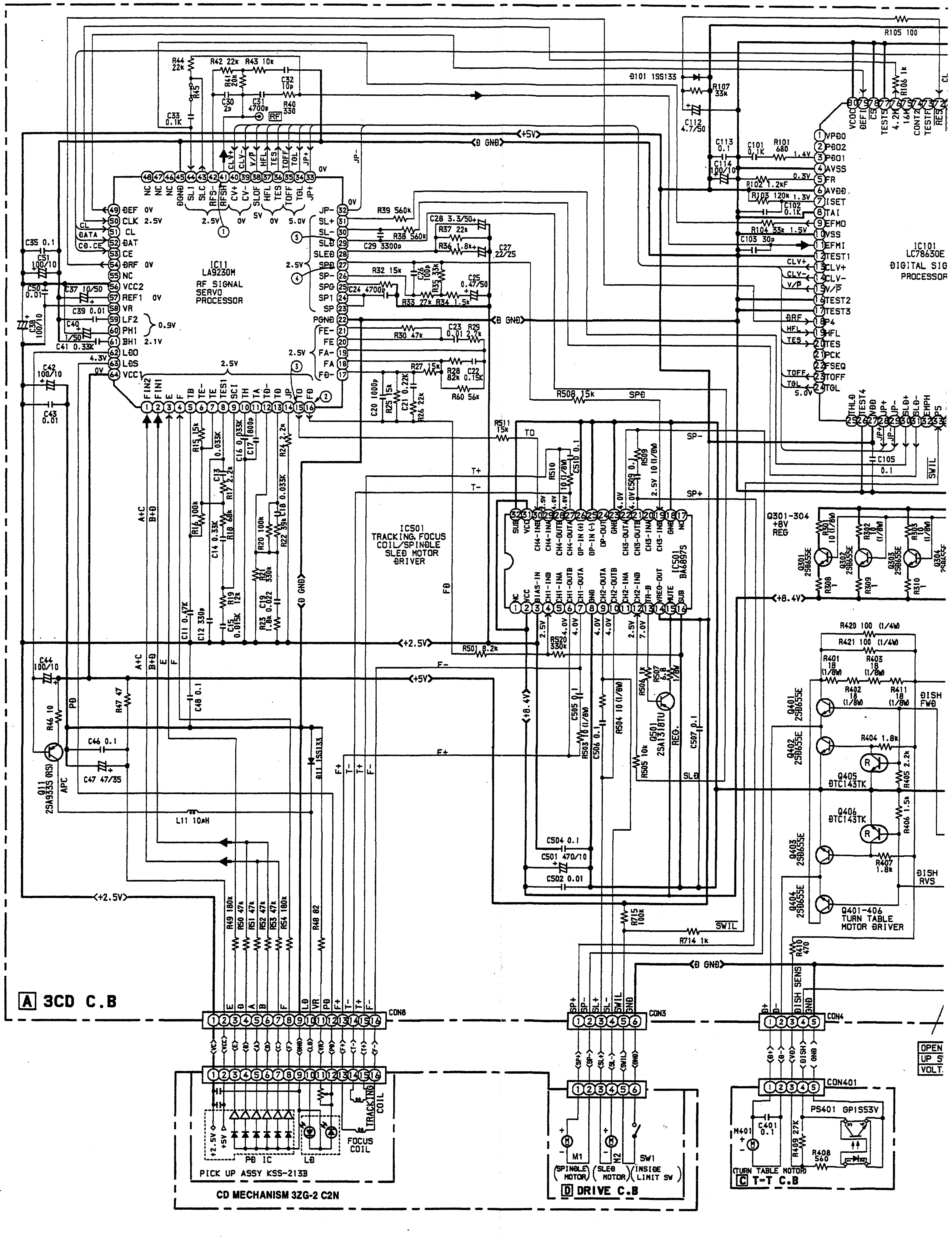
IC, TA7291


Vcc
Vref
②
⑧
REG.
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
⑥ Vs
⑦ OUT1
③ OUT2
⑨
①
⑤
IN1
IN2
GND

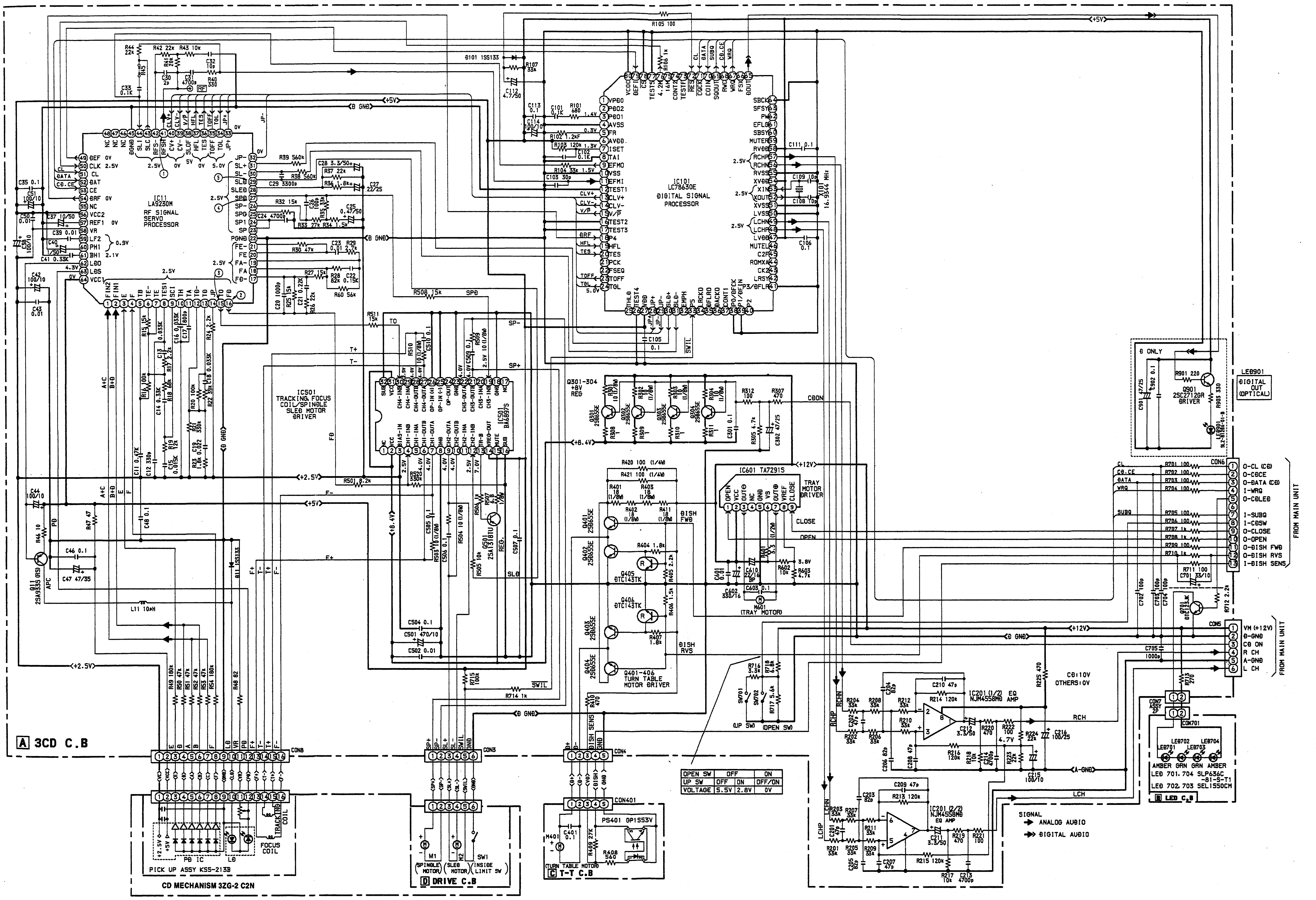
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

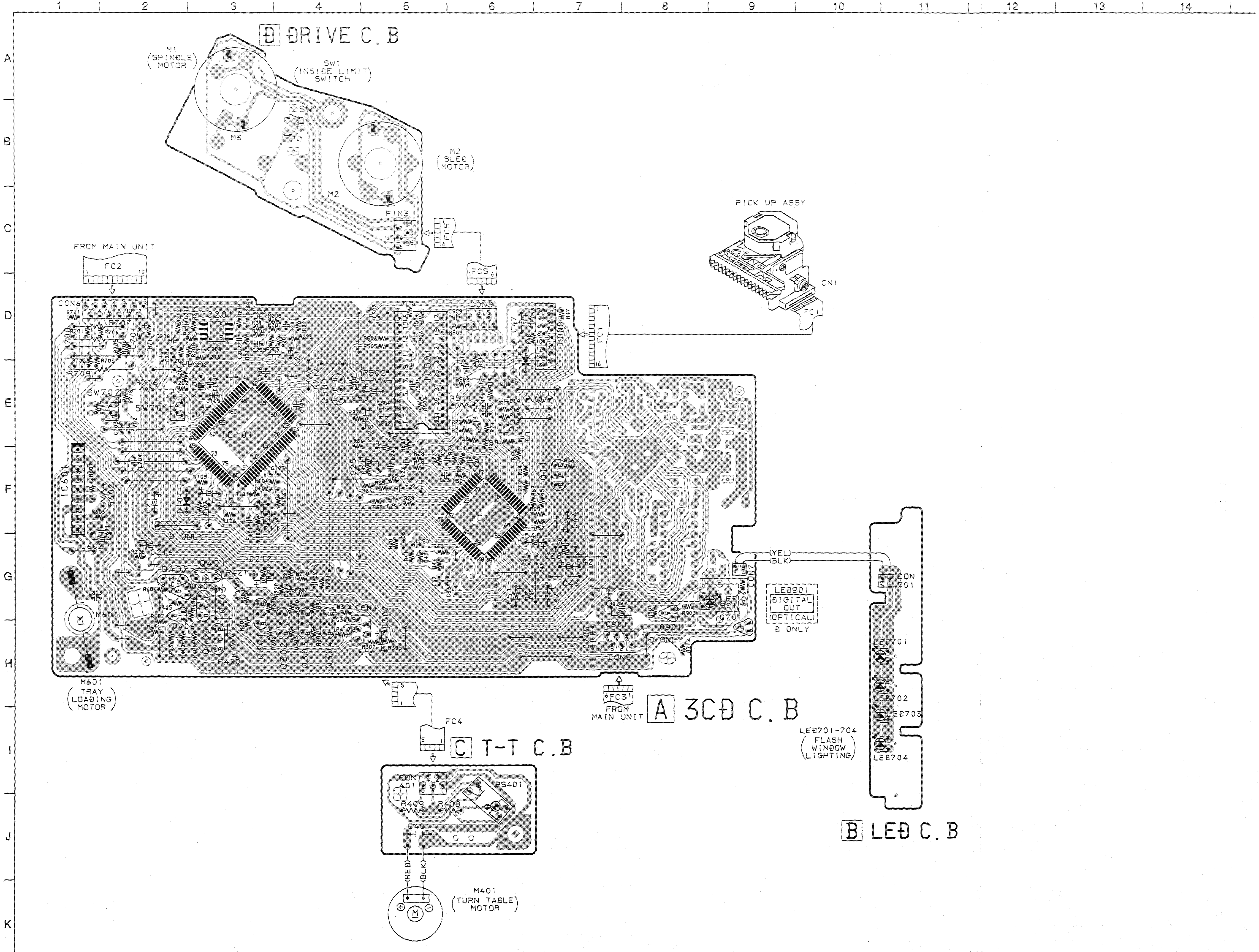
SCHEMATIC DIAGRAM


IC11 LA9230M RF SIGNAL SERVO PROCESSOR
IC101 LC78630E DIGITAL SIGNAL PROCESSOR
IC501 BA6897S
IC501 TRACKING, FOCUS COIL/SPINDLE SLED MOTOR DRIVER
Q501 2SA1318TU REG.
Q11 2SA9335 (RS) APC
Q301-304 +8V REG
Q401-406 TURN TABLE MOTOR DRIVER
DISH FWD
DISH RVS
A 3CD C.B
CON8
CON3
CON4
CON401
PICK UP ASSY KSS-213B
PD IC
LD
TRACKING COIL
FOCUS COIL
CD MECHANISM 3ZG-2 C2N
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D DRIVE C.B
PS401 GP1S53V
M401 (TURN TABLE MOTOR)
C T-T C.B
OPEN UP SW VOLT.
<+5V>
<+2.5V>
<+8.4V>
<D GND>

SCHEMATIC DIAGRAM


A 3CD C.B
IC11 LA9230M RF SIGNAL SERVO PROCESSOR
IC101 LC78630E DIGITAL SIGNAL PROCESSOR
IC501 TRACKING FOCUS COIL/SPINDLE SLED MOTOR DRIVER
IC501 BA6897S
Q301-304 +8V REG
IC601 TA7291S TRAY MOTOR DRIVER
M601 (TRAY MOTOR)
Q401-406 TURN TABLE MOTOR DRIVER
IC201 (1/2) NJM4558MD EQ AMP
IC201 (2/2) NJM4558MD EQ AMP
Q901 2SC2712GR DRIVER
LED901 DIGITAL OUT (OPTICAL)
D ONLY
X101 16.9344 MHz
CON6
O-CL (CD)
O-CDCE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
FROM MAIN UNIT
CON5
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT
CD:10V OTHERS:0V
CON8
CON3
CON4
CON401
CON7 ASSY 2P
CON701
PICK UP ASSY KSS-213B
PD IC
LD
FOCUS COIL
TRACKING COIL
CD MECHANISM 3ZG-2 C2N
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D DRIVE C.B
M401 (TURN TABLE MOTOR)
PS401 GP1S53V
C T-T C.B
SW701 (UP SW)
SW702 (OPEN SW)
LED702 LED703
LED701 LED704
AMBER GRN GRN AMBER
LED 701, 704 SLP636C -81-S-T1
LED 702, 703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO

OPEN SW	OFF		ON
UP SW	OFF	ON	OFF/ON
VOLTAGE	5.5V	2.8V	0V


Đ DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
M2 (SLED MOTOR)
M3
PIN3
FC5
FROM MAIN UNIT
FC2
PICK UP ASSY
CN1
FC1
CON6
CON3
CON8
IC201
IC101
IC501
IC1
IC601
SW701
SW702
Q501
Q11
Q401
Q402
Q405
Q406
CON4
CON5
CON7
Q701
Q901
C901
LED901
LED901 DIGITAL OUT (OPTICAL) Đ ONLY
Đ ONLY
(YEL)
(BLK)
CON 701
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LEĐ C.B
M601
M601 TRAY LOADING MOTOR
FC3 FROM MAIN UNIT
A 3CĐ C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K

IC DESCRIPTION

IC, LC78630E

Pin No.	Pin Name	I/O	Description
1	VPDO	O	Vari-pitch PLL charge pump output pin. This pin must be open when not used.
2	PDO2	O	Bit clock playback PLL charge pump output pin during 2 times and 4 times speed. This pin must be open when not used.
3	PDO1	O	Bit clock playback PLL charge pump output pin during normal speed.
4	AVSS	—	Analog system GND. Normally 0V.
5	FR	I	An external resistor to set built-in VCO frequency range is connected to this pin.
6	AVDD	—	Analog system GND.
7	ISET	I	An external resistor set PD01 and PD02 output current is connected to this pin.
8	TAI	I	Test input pin with built-in pull-down resistor.
9	EFMO	O	EFM signal output pin.
10	VSS	—	Digital system GND. Normally 0V.
11	EFMI	I	EFM signal input pin.
12	TEST1	I	Test input pin with built-in pull-down resistor.
13	CLV+	O	Spindle servo control output pin. Acceleration when CLV+ is "H".
14	CLV-	O	Deceleration when CLV- is "H".
15	V/$\overline{\text{P}}$	O	Rough servo/phase control automatic selection monitoring output pin. Rough servo at "H". Phase control mode at "L".
16, 17	TEST2, TEST3	I	Test input pin with built-in pull-down resistor.
18	P4	I/O	Input/output port.
19	HFL	I	Tracking detection signal input pin. Schmitt input.
20	TES	I	Tracking error signal input pin. Schmitt input.
21	PCK	O	EFM data playback bit clock monitoring pin. 4.3218 MHz when phase is locked during normal speed playback.
22	FSEQ	O	Sync signal detection output pin. When the sync signal detected from the EFM signal agrees with the internally generated sync signal, "H" output.
23	TOFF	O	Tracking OFF output pin.
24	TGL	O	Tracking gain selector output pin. Gain is increased at "L".
25	THLD	O	Tracking hold output pin.
26	TEST4	I	Test input pin with built-in pull-down resistor.
27	VDD	—	Digital system GND.
28, 29	JP+, JP-	O	Tracking jump output pin. JP+ "H" occurs at acceleration during jump toward outside or decelerator toward inside. JP- "H" occurs at acceleration during jump toward inside or deceleration toward outside.
30, 31	SLD+, SLD-	O	Sled output pin. Four different level can be set using commands.
32	EMPH	O	Emphasis monitoring output. "H" indicates that emphasis disc is being played back.
33	P5	I/O	Input/output.
34	LRCKO	O	Digital filter output. LR clock output pin.
35	DFLRO	O	Digital filter output. LR data output pin. DF is turned OFF with the DFOFF command.
36	DACKO	O	Digital filter output. Bit clock output pin.
37	CONT1	O	Output port.
38	P0/DFCK	I/O	Input/output port. The DF bit clock input pin during the anti-shock mode.
39	P1/DFIN	I/O	Input/output port. The DF data input pin during the anti-shock mode.
40	P2	I/O	Input/output port. Deemphasis filter ON/OFF selection input pin during the anti-shock mode. Deemphasis filter ON at "H".
41	P3/DFLR	I/O	Input/output port. The DF LR clock input pin during the anti-shock mode.
42	LRSY	O	For ROMXA • LR clock output pin.
43	CK2	O	For ROMXA • Bit clock output pin. Polarity inversion by the CK2CON command.
44	ROMXA	O	For ROMXA • Interpolation data output pin. The un-interpolated data is output with the ROMXA command.
45	C2F	O	For ROMXA • C2 flat output pin.
46	MUTEL	O	For 1-bit DAC • L-channel mute output pin.
47	LVDD	—	For 1-bit DAC • L-channel power supply.
48	LCHP	O	For 1-bit DAC • L-channel P output pin.
49	LCHN	O	For 1-bit DAC • L-channel N output pin.
50	LVSS	—	For 1-bit DAC • L-channel GND. Normally 0 V.
51	XVSS	—	Crystal oscillator GND. Normally 0 V.
52	XOUT	O	An external 16.9344 MHz crystal oscillator is connected to this pin.
53	XIN	I	33.8688 MHz crystal oscillator is connected during 4 time speed playback.
54	XVDD	—	Crystal oscillator GND.
55	RVSS	—	For 1-bit DAC • R-channel GND. Normally 0 V.
56	RCHN	O	For 1-bit DAC • R-channel N output pin.
57	RCHP	O	For 1-bit DAC • R-channel P output pin.
58	RVDD	—	For 1-bit DAC • R-channel power supply.
59	MUTER	O	For 1-bit DAC • R-channel mute output pin.
60	SBSY	O	Subcode block sync signal output pin.
61	EFLG	O	C1 and C2 error correction monitoring pin.
62	PW	O	ubcode P, Q, R, S, T, U, V and W output pin.
63	SFSY	O	Subcode frame sync signal output pin. The level falls down when the subcode is in standby.
64	SBCK	I	Subcode read clock input pin. Schmitt input. This pin must be connected GND when not used.
65	DOUT	O	Digital output pin.
66	FSX	O	7.35 kHz sync signal divided from the crystal oscillator is output to this pin.
67	WRQ	O	Subcode Q output standby output pin.
68	RWC	I	Read/write control input pin.
69	SQOUT	O	Subcode Q output pin.
70	COIN	I	Microprocessor command input pin.
71	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read clock input from SQOUT. Schmitt input.
72	$\overline{\text{RES}}$	I	Chip reset input pin. This pin goes to "L" once when the main power is turned on.
73	TESTF	O	Test output pin.
74	CONT2	O	Output port.

Pin No.	Pin Name	I/O	Description
75	16M	O	16.9344 MHz crystal output pin. 33.8688 MHz is output during 4 times speed playback.
76	4.2M	O	4.2336 MHz output pin.
77	TEST5	I	Test input pin with built-in pull-down resistor.
78	$\overline{CS}$	I	Chip select input pin with built-in pull-down resistor.
79	DEFI	I	Defect detection signal input pin. This pin must be connected GND when not used.
80	VCOC	I	Vari-pitch VCO control input pin. This pin must be connected GND when not used.

IC, LA9230M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Photo diode of pickup is connected to this pin. This signal is added to the FIN1 pin signal to produce the RF signal and subtracted to produce the FE signal.
2	FIN1	I	Photo diode of pickup is connected to this pin.
3	E	I	Photo diode of pickup is connected to this pin. This signal is subtracted from the F pin signal to produce the FE signal.
4	F	I	Photo diode of pickup is connected to this pin.
5	TB	I	DC component of the TE signal is input to this pin.
6	TE-	I	The TE signal gain adjustment resistor is connected between this pin and the TE pin.
7	TE	O	The TE signal output pin.
8	TESI	I	TES (Track Error Sense) comparator input pin. The TE signal is input after passing through band-pass filter.
9	SCI	I	Shock sense input signal is connected to this pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD-	I	An external tracking phase compensation constant is connected between the TD and VR pins.
13	TD	I	An external tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD-	I	A focusing phase compensation constant is connected between the FD and FA pins.
18	FA	I	A focusing phase compensation constant is connected between the FD- and FA- pins.
19	FA-	I	A focusing phase compensation constant is connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE-	I	An external FE signal gain setting resistor is connected between the TE and this pins.
22	AGND	—	Analog signal GND.
23	SP	O	Single-ended output of the CV+ and CV- pin input signal.
24	SPI	I	Spindle amplifier input.
25	SPG	I	An external spindle gain in 12 cm mode setting resistor is connected to this pin.
26	SP-	I	An external spindle phase compensation constant together with the SPD pin, is connected to this pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Sled phase compensation constant is connected to this pin.
29	SLD	O	Sled control signal output pin.
30, 31	SL-, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP-, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input pin from DSP. Gain low when TGL = "H".
35	TOFF	I	Tracking off control signal input pin from DSP. Tracking off when TGL = "H".
36	TES	O	The TES signal is output from this pin to DSP.
37	HFL	I	The (HIGH FREQUENCY LEVEL) is used to judge whether the main beam is positioned above the bits or mirror.

Pin No.	Pin Name	I/O	Description
38	SLOF	I	Sled servo off control input pin.
39, 40	CV-, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS-	I	RF gain setting and 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	The (SLICE LEVEL CONTROL) is the signal which control the data slice level of the RF waveform with DSP. The (SLICE LEVEL CONTROL) is from this pin.
44	SLI	I	The input signal which controls the data slice level with DSP, is connected to this pin.
45	DGND	—	Digital system GND.
46	NC [FSC]	—	No connection. (Output pin for focus search smoothing capacity.)
47, 48	NC	—	No connection.
49	DEF	O	Disc defect detection output pin.
50	CLK	I	Reference clock input pin. The DSP 4.23 MHz is input to this pin.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	(DETECT RF) RF level detection output.
55	NC	—	No connection.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	I	A bypass capacitor for reference voltage is connected to this pin.
58	VR	O	Reference voltage output pin.
59	LF2	I	An external disc defect detection constant is connected to this pin.
60	PH1	I	An external RF signal peak holding capacitor is connected to this pin.
61	BH1	I	An external RF signal bottom holding capacitor is connected to this pin.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button) • Press the power switch button. • Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

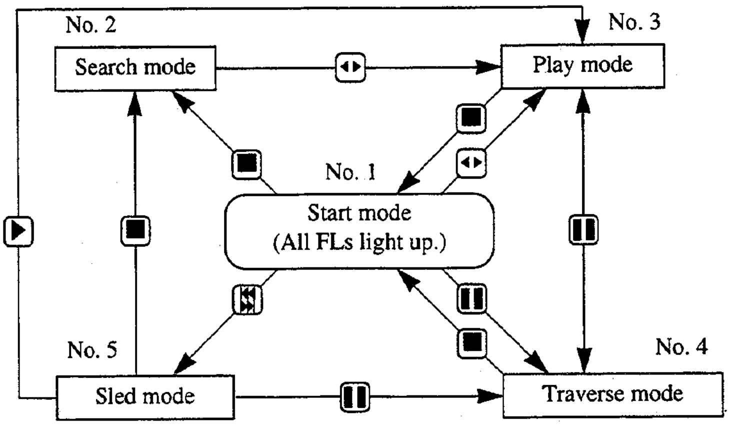
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

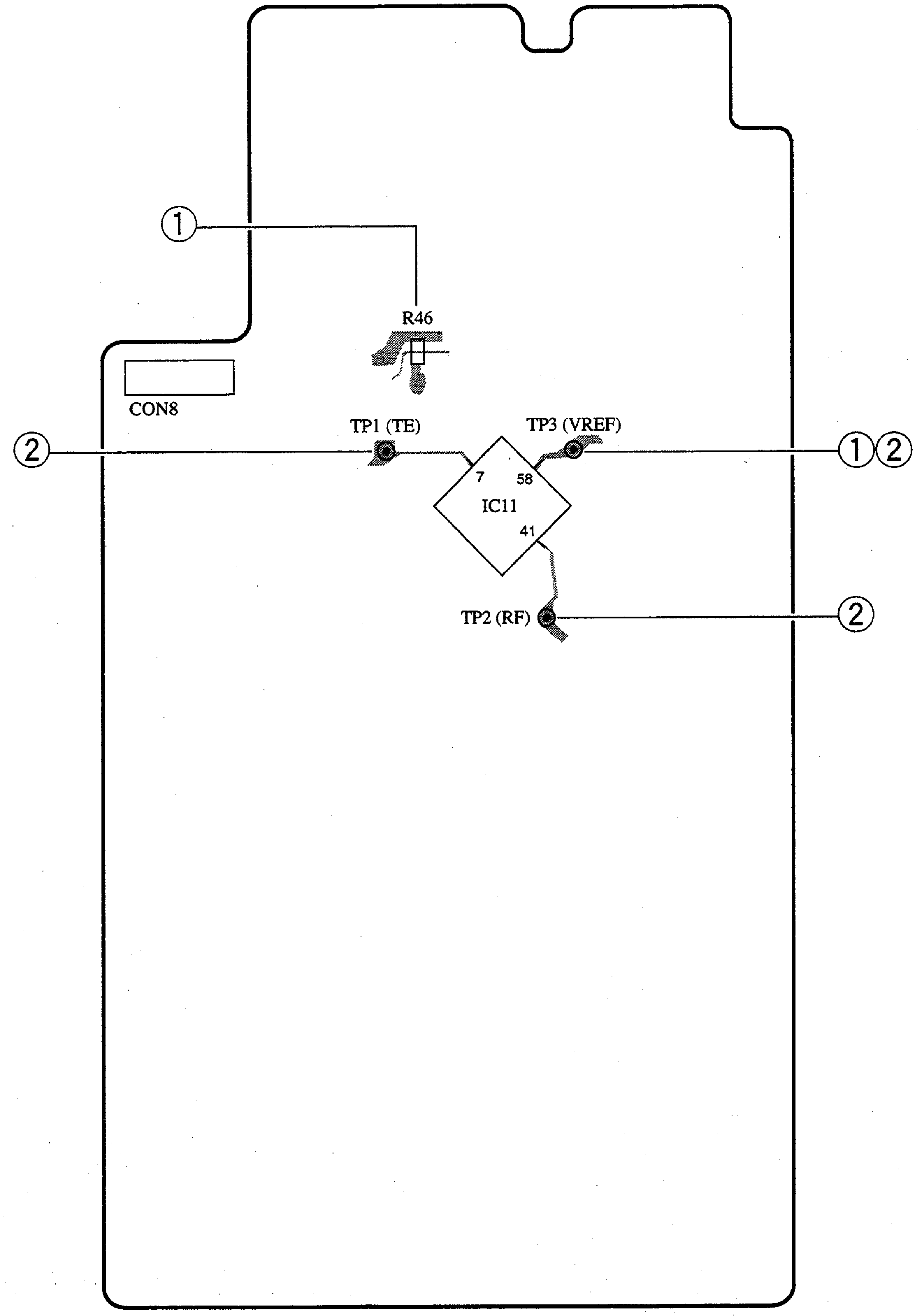
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



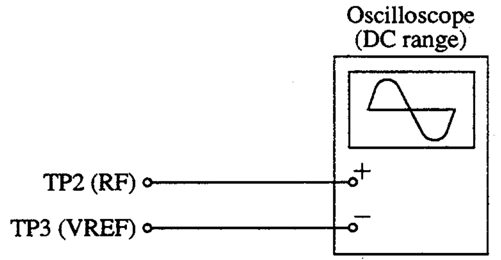
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

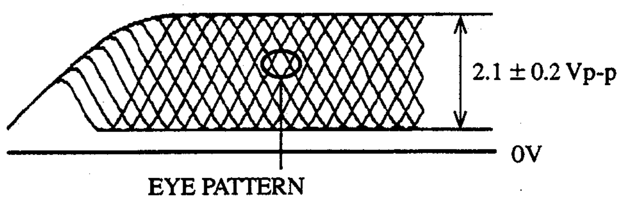


Note: • Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
• During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. RF waveform Check



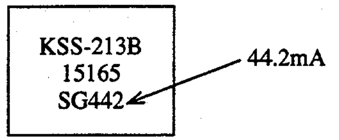
1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Confirm that the waveform at oscilloscope has amplitude of 2.1 Vp-p, and clear wedge area in its center.



EYE PATTERN
must be CLEAR and MAX.

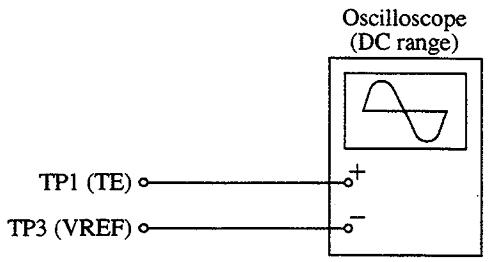
VOLT/DIV: 50mV
TIME/DIV: 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω).
The difference for the specified value shown on the label must be within ± 6.0mA.

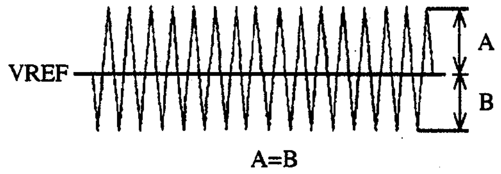

KSS-213B
15165
SG442

$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check

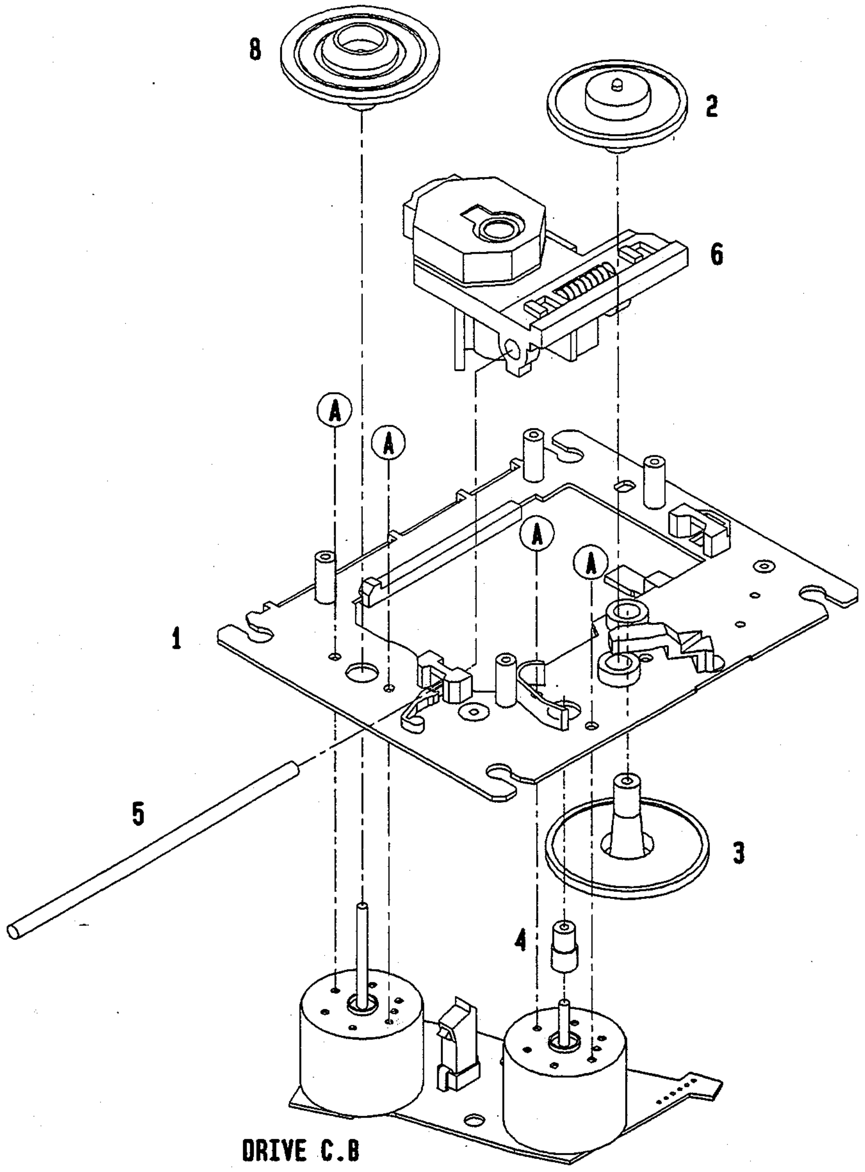


1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782(YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



VOLT/DIV: 20mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1／1 (3ZG-2 C2N <Z>)



CD MECHANISM PARTS LIST 1／1 (3ZG-2 C2N <Z>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-233-019		TURN TABLE,A5
3	83-ZG2-205-219		GEAR,B	A	87-261-032-219		SCREW V+2-3
4	83-ZG2-220-01K		GEAR MOTOR 2				
5	83-ZG2-207-119		SHAFT,SLIDE				

USE MODEL LIST

CX-NAV70 (NSX-AV70)
CX-NAV700 (NSX-AV700)
CX-NAV71 (NSX-AV71)
CX-NAV80 (NSX-AV80)
CX-NAV800 (NSX-AV800)
CX-NAV90 (NSX-AV90)
CX-NAV900 (NSX-AV900)
CX-NK300 (NSX-K300)
CX-NK700 (NSX-K700)
CX-NK77 (NSX-K77)
CX-NK80 (NSX-K80)
CX-NK90 (NSX-K90)
CX-NV300 (NSX-V300)
CX-NV3000 (NSX-V3000)
CX-NV3001 (NSX-V3001)
CX-NV390 (NSX-V390)
CX-NV500 (NSX-V500)
CX-NV700 (NSX-V700)
CX-NV705 (NSX-V705)
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CX-NV715 (NSX-V715)
CX-NV720 (NSX-V720)
CX-NV770 (NSX-V770)
CX-NV800 (NSX-V800)
CX-NV8000 (NSX-V8000)
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CX-NV820 (NSX-V820)
CX-NV900 (NSX-V900)
CX-NV9000 (NSX-V9000)
CX-NV9090 (NSX-V9090)
CX-NV915 (NSX-V915)
CX-NV929 (NSX-V929)
FD-NAKH8 (NSX-AKH8)
FD-NH8 (NSX-AVH8)
FD-NH8 (NSX-AVH8)
FD-NH80 (NSX-AVH80)
FD-NH9 (NSX-AVH9)
FD-NH9 (NSX-AVH9)
FD-NH90 (NSX-AVH90)
FD-SNAKH8 (NSX-AKH8)
FD-SNH9 (NSX-AVH9)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

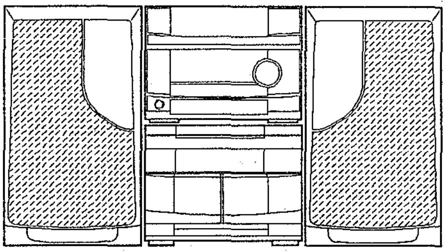
DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

aiwa

aiwa SERVICE

NSX-H9
NSX-H90

SERVICE MANUAL



COMPACT DISC STEREO CASSETTE RECEIVER

- BASIC TAPE MECHANISM: 2ZM-3MK2 PR2N
- BASIC CD MECHANISM: 4ZG-1WRNM
- TYPE. HE,HR,LH(H9)
  U(H90)

- If requiring information about the CD mechanism, see Service Manual of 4ZG-1WR.
  (S/M Code No. 09-965-128-10T) U16442

SYSTEM	AMPLIFIER	CASSETTE DECK CD PLAYER	REMOTE CONTROLLER	SPEAKERS
NSX-H9	RX-NH9	FD-NH9	RC-T501	SX-ANH9
NSX-H90	RX-NH90	FD-NH90	RC-T501	SX-ANH90

1939

S/M Code No. 09-966-141-50T

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MODEL-NO. FD-NH9/NH90

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MODEL-NO. SX-ANH9/ANH90

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SPECIFICATIONS

STEREO RECEIVER RX-NH9/NH90

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

AM tuner section

Tuning range	530 kHz to 1710 kHz (10 kHz step) 531 kHz to 1602 kHz (9 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

Amplifier section

Power output	LH: 120 W+120 W (6 ohms, T.H.D.10 %, 1 kHz) HR, HE: Rated 95 W+95 W (6 ohms, T.H.D.1 %, 1 kHz) Reference: 120 W+120 W (6 ohms, T.H.D.10 %, 1 kHz) *without connecting to the SURROUND SPEAKERS U: 100 watts per channel, Min. RMS at 6 ohms, from 50 Hz to 20 kHz, *with no more than* 1 % Total Harmonic Distortion
Total harmonic distortion	0.1 % (60 W, 1 kHz, 6 ohms)
Inputs	VIDEO 1/MD IN: 200 mV (adjustable) VIDEO 2/AUX IN: 200 mV (adjustable) MIC 1, MIC 2: 1 mV (10 kohms)
Outputs	REC OUT: 200 mV SUPER WOOFER: LH: 2.6 V HR, HE, U: 2.4 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 16 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

General

Power requirements	LH, HR, HE: 120 V/220-230 V/240 V AC, switchable 50/60 Hz U: 120 V AC, 60 Hz
Power consumption	130 W (System total 150 W)
Dimensions of main unit (W × H × D)	260×198×333.5 mm (10 1/4 × 7 7/8 × 13 1/4 in.)
Weight of main unit	LH, U: 5.8 kg (12 lbs 14 oz.) HR, HE: 6.5 kg

COMPACT DISC/STEREO CASSETTE DECK FD-NH9/NH90

Cassette deck section

Track format	4 tracks, 2 channels stereo
Frequency response	Metal tape: 50 Hz-17000 Hz CrO$_2$ tape: 50 Hz-16000 Hz Normal tape: 50 Hz-15000 Hz
Signal-to-noise ratio	LH, HR, HE: 70 dB (Dolby C NR ON, Metal tape peak level) U: 75 dB (Dolby C NR ON, Metal tape peak level)
Recording system	AC bias
Heads	Deck 1: Playback head × 1 Deck 2: Recording/playback/erase head × 1

Compact disc player section

Laser	Semiconductor laser (λ=780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.03 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable
General	
Dimensions (W × H × D)	260 × 203 × 321.5 mm (10 1/4 × 8 × 12 3/4 in.)
Weight	3.9 kg (8 lbs 10 oz.)

Speaker system SX-ANH9/ANH90

Cabinet type	4 way, bass reflex with surround speaker (magnetic sealed type)
Speakers	Woofer: 140 mm (5 5/8 in.) cone type Mid-range: 80 mm (3 1/4 in.) cone type Tweeter: 50 mm (2 in.) cone type Super tweeter: 20 mm (13/16 in.) ceramic type Surround speaker: 80 mm (3 1/4 in.) cone type
Impedance	Front speaker: 6 ohms Surround speaker: 16 ohms
Output sound pressure level	LH, HR, HE: 87 dB/W/m U: 88 dB/W/m
Dimensions (W × H × D)	250 × 405 × 286 mm (9 7/8 × 16 × 11 3/8 in.)
Weight	5 kg (11 lbs)

- Design and specifications are subject to change without notice.
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  Under license from BBE Sound,Inc.

MODEL NO.

RX-NH9/NH90

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-069-049		C-IC,BA3842F
	87-A20-067-040		C-IC,M65849FP
	87-A20-063-019		IC,STK-419-140<U>
	87-A20-191-019		IC,STK-419-140A<EXCEPT U>
	87-017-888-089		IC,NJM4558MD
	87-017-915-089		IC,BU4094BCF
	87-017-804-019		IC,BU4052BC
	87-A20-083-019		IC,BA3835S
	87-A20-107-019		IC,BA3836
	87-017-914-019		IC,BU4094 BC
	87-A20-056-019		IC,BA3880S
	87-070-127-119		IC,LC72131D
	87-017-714-119		IC,LA1836L
	86-NT1-618-010		IC,LC 866424V-5A62
	87-070-083-019		IC,GP1U281X
TRANSISTOR			
	89-213-702-019		TR,2SB1370E
	89-109-352-089		TR,2SA935Q
	87-026-610-089		TR, KTC3198GR
	89-332-665-089		TR,2SC3266GR
	89-337-221-389		C-TR,2SC3722K
	89-324-122-089		C-TR,2SC2412R
	89-110-372-089		C-TR,2SA1037R
	89-110-373-089		C-TR,2SA1037S
	87-026-210-089		C-TR,DTC144EK T147
	89-421-141-289		C-TR,2SD2114K,UV
	87-026-609-089		TR, KTA1266GR
	89-109-373-089		TR,2SA1037S
	89-112-965-089		TR,2SA1296GR
	87-026-228-089		C-TR DTA124EK
	89-113-187-089		TR,2SA1318TU
	89-406-555-089		TR,2SD655E
	89-333-266-089		C-TR,2SC3326B
	87-026-214-089		TR,DTA114YS
	87-026-211-089		C-TR,DTA144EK T147
	89-327-125-089		C-TR,2SC2712GR
	89-327-143-089		C-TR,2SC2714 (O)
	87-026-226-089		C-TR,DTA143EK
	89-505-434-589		*C-FET,2SK543(4/5)*
DIODE			
	87-A40-116-069		DIODE,RS403L-B-D-51
	87-A40-115-069		DIODE,SAD102
	87-070-274-089		*DIODE,1N4003SEM*
	87-020-027-089		C-DIODE,1SS184
	87-020-125-089		C-DIODE,1SS181
	87-020-465-089		DIODE,1SS133
	87-017-174-089		ZENER,HZS11A3L
	87-017-146-089		ZENER,HZS30-2
	87-001-290-089		ZENER,HZS5C1
	87-017-148-089		ZENER,HZS6A1L
	87-001-731-089		ZENER HZS6C2L
	87-001-911-089		ZENER,UTZJ4.7A (TAPG)
MAIN C.B			
C101	87-016-520-099		CAP E 3300-65<U>
C101	87-016-657-099		CAP,E 3300-71<EXCEPT U>
C102	87-016-520-099		CAP E 3300-65<U>
C102	87-016-657-099		CAP,E 3300-71<EXCEPT U>

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C104	87-010-235-089		CAP,E 470-16 SME
C105	87-010-235-089		CAP,E 470-16 SME
C106	87-016-285-089		CAP,E 47-100 SME
C107	87-010-407-089		CAP,E 33-50 SME
C108	87-010-407-089		CAP,E 33-50 SME
C109	87-010-263-089		CAP,E 100-10 SME 5X11
C112	87-010-382-089		CAP,E 22-25 SME
C113	87-010-403-089		CAP,E 3.3-50 SME
C116	87-012-140-089		C-CAP,S 470P-50 CH
C121	87-012-368-089		C-CAP,S 0.1-50 F
C122	87-012-368-089		C-CAP,S 0.1-50 F
C123	87-012-368-089		C-CAP,S 0.1-50 F
C124	87-012-368-089		C-CAP,S 0.1-50 F
C125	87-010-263-089		CAP,E 100-10 SME 5X11
C126	87-010-197-089		C-CAP,S 0.01 B
C127	87-010-197-089		C-CAP,S 0.01 B
C131	87-010-186-089		C-CAP,S 4700P-50 B
C132	87-010-186-089		C-CAP,S 4700P-50 B
C152	87-010-260-089		CAP,E 47-25 SME
C171	87-016-658-099		CAP,E 4700-35V SME
C172	87-016-658-099		CAP,E 4700-35V SME
C173	87-012-368-089		C-CAP,S 0.1-50F
C174	87-012-368-089		C-CAP,S 0.1-50F
C175	87-012-368-089		C-CAP,S 0.1-50F
C176	87-012-368-089		C-CAP,S 0.1-50F
C220	87-010-194-089		C-CAP,S 0.047-25 F
C221	87-010-545-089		CAP,E 0.22-50 SME
C222	87-010-545-089		CAP,E 0.22-50 SME
C225	87-012-157-089		C-CAP,S 330P-50 CH
C226	87-012-157-089		C-CAP,S 330P-50 CH
C227	87-010-402-089		CAP,E 2.2-50 SME
C228	87-010-402-089		CAP,E 2.2-50 SME
C229	87-010-382-089		CAP,E 22-25 SME
C230	87-010-382-089		CAP,E 22-25 SME
C231	87-018-099-089		CAP,TC-U 3.9P-50 CH
C232	87-018-099-089		CAP,TC-U 3.9P-50 CH
C233	87-010-196-089		C-CAP,S 0.1-25 F
C234	87-010-196-089		C-CAP,S 0.1-25 F
C235	87-010-196-089		C-CAP,S 0.1-25 F
C236	87-010-196-089		C-CAP,S 0.1-25 F
C240	87-010-197-089		C-CAP,S 0.01-25 B
C245	87-012-368-089		C-CAP,S 0.1-50 F
C500	87-010-405-089		CAP,E 10-50 SME
C501	87-010-213-089		C-CAP,S 0.015-25 B<HEJ,HRJ>
C501	87-010-198-089		C-CAP,S 0.022-25 B<LH,U>
C502	87-010-213-089		C-CAP,S 0.015-25 B<HEJ,HRJ>
C502	87-010-198-089		C-CAP,S 0.022-25 B<LH,U>
C503	87-010-179-089		C-CAP,S 1200P-50 B<HEJ,HRJ>
C503	87-010-183-089		C-RES,S 2700P-50 B<LH,U>
C504	87-010-179-089		C-CAP,S 1200P-50 B<HEJ,HRJ>
C504	87-010-183-089		C-RES,S 2700P-50 B<LH,U>
C505	87-010-546-089		CAP,E 0.33-50 SME
C506	87-010-546-089		CAP,E 0.33-50 SME
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-196-089		C-CAP,S 0.1-25 F
C530	87-010-197-089		C-CAP,S 0.01-25 B
C531	87-010-183-089		C-CAP,S 2700P-50 B
C532	87-010-194-089		C-CAP,S 0.047-25 F
C533	87-010-196-089		C-CAP,S 0.1-25 F
C534	87-010-263-089		CAP,E 100-10 SME 5X11
C535	87-010-404-089		CAP,E 4.7-50 SME
C536	87-010-404-089		CAP,E 4.7-50 SME
C537	87-010-545-089		CAP,E 0.22-50 SME
C539	87-010-194-089		C-CAP,S 0.047-25 F

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C540	87-010-384-089		CAP,E 100-25 SME
C541	87-010-404-089		CAP,E 4.7-50 SME
C542	87-010-404-089		CAP,E 4.7-50 SME
C560	87-012-156-089		C-CAP,S 220P-50 CH
C561	87-012-156-089		C-CAP,S 220P-50 CH
C562	87-012-156-089		C-CAP,S 220P-50 CH
C563	87-012-142-089		C-CAP,S 0.33-16 F
C564	87-010-196-089		C-CAP,S 0.1-25 F
C565	87-018-209-089		CAP,TC-U 0.1-50 F
C566	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-184-089		C-CAP,S 3300P-50 B
C602	87-010-184-089		C-CAP,S 3300P-50 B
C603	87-010-405-089		CAP,E 10-50 SME
C604	87-010-405-089		CAP,E 10-50 SME
C605	87-010-260-089		CAP,E 47-25 SME
C606	87-010-101-089		CAP,E 220-16 SME
C607	87-010-188-089		C-CAP,S 6800P-50 B
C608	87-010-188-089		C-CAP,S 6800P-50 B
C609	87-018-127-089		CAP,TC-U 470P-50 B
C610	87-018-127-089		CAP,TC-U 470P-50 B
C611	87-010-197-089		C-CAP,S 0.01-25 B
C612	87-010-197-089		C-CAP,S 0.01-25 B
C613	87-010-195-089		C-CAP,S 0.068-25 F
C614	87-010-195-089		C-CAP,S 0.068-25 F
C615	87-010-404-089		CAP,E 4.7-50 SME
C616	87-010-404-089		CAP,E 4.7-50 SME
C617	87-010-404-089		CAP,E 4.7-50 SME
C618	87-010-404-089		CAP,E 4.7-50 SME
C701	87-010-381-089		CAP,E 330-16 SME
C702	87-010-404-089		CAP,E 4.7-50 SME
C703	87-010-197-089		C-CAP,S 0.01-25 B
C704	87-010-197-089		C-CAP,S 0.01-25 B
C711	87-010-263-089		CAP,E 100-10 SME 5X11
C712	87-010-196-089		C-CAP,S 0.1-25 F
C715	87-010-197-089		C-CAP,S 0.01-25 B
C716	87-010-197-089		C-CAP,S 0.01-25 B
C722	87-010-152-089		C-CAP,S 8P-50 CH
C723	87-010-178-089		C-CAP,S 1000P-50 B
C725	87-010-178-089		C-CAP,S 1000P-50 B
C727	87-010-196-089		C-CAP,S 0.1-25 F
C728	87-010-248-089		CAP,E 220-10 SME
C760	87-010-197-089		C-CAP,S 0.01-25 B
C761	87-010-196-089		C-CAP,S 0.1-25 F
C770	87-010-405-089		CAP,E 10-50 SME
C771	87-010-405-089		CAP,E 10-50 SME
C772	87-010-194-089		C-CAP,S 0.047-25 F
C773	87-010-196-089		C-CAP,S 0.1-25 F
C774	87-010-263-089		CAP,E 100-10 SME 5X11
C775	87-010-405-089		CAP,E 10-50 SME
C776	87-010-197-089		C-CAP,S 0.01-25 B
C777	87-010-400-089		CAP,E 0.47-50 SME
C778	87-010-401-089		CAP,E 1-50 SME
C779	87-010-401-089		CAP,E 1-50 SME
C780	87-010-197-089		C-CAP,S 0.01-25 B
C781	87-010-405-089		CAP,E 10-50 SME
C782	87-010-405-089		CAP,E 10-50 SME
C787	87-010-184-089		C-CAP,S 3300P-50 B
C788	87-010-184-089		C-CAP,S 3300P-50 B
C789	87-010-179-089		C-CAP,S 1200P-50 B
C790	87-010-179-089		C-CAP,S 1200P-50 B
C791	87-010-401-089		CAP,E 1-50 SME
C792	87-010-180-089		C-CAP,S 1500P-50 B
C793	87-010-189-089		C-CAP,S 8200P-50 B
C794	87-010-408-089		CAP,E 47-50 SME

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C795	87-010-194-089		C-CAP,S 0.047-25 F
C796	87-010-403-089		CAP,E 3.3-50 SME
C801	87-018-134-089		CAP,TC-U0.01-16 Y
C802	87-018-134-089		CAP,TC-U0.01-16 Y
C813	87-018-134-089		CAP,TC-U0.01-16 Y
C814	87-010-197-089		C-CAP,S 0.01-25 B
C815	87-018-134-089		CAP,TC-U 0.01-16 Y
C816	87-018-134-089		CAP,TC-U 0.01-16 Y
C817	87-010-197-089		C-CAP,S 0.01-25 B
C818	87-010-197-089		C-CAP,S 0.01-25 B
C819	87-010-197-089		C-CAP,S 0.01-25 B
C820	87-010-408-089		CAP,E 47-50 SME
C821	87-010-197-089		C-CAP,S 0.01-25 B
C822	87-010-197-089		C-CAP,S 0.01-25 B
C823	87-010-197-089		C-CAP,S 0.01-25 B
C828	87-010-196-089		C-CAP,S 0.1-25 F
C829	87-010-196-089		C-CAP,S 0.1-25 F
C940	87-010-197-089		C-CAP,S 0.01-25 B
C946	87-010-401-089		CAP,E 1-50 SME
C960	87-010-196-089		C-CAP,S 0.1-25 F
C961	87-010-152-089		C-CAP,S 8P-50 CH
CF801	87-008-261-019		FLTR,SFE10.7MA5-A
CF802	87-008-261-019		FLTR,SFE10.7MA5-A
FFE801	A8-6ZA-190-039		6ZA-1FEUNM
J252	87-A60-020-019		JACK,6.3 BLK W/SW
J253	87-099-802-019		JACK,PIN 3P BRW
J253	87-099-802-019		JACK,PIN 3P BRW
J254	87-033-240-019		TERMINAL,SP 4P32SV1-05
J254	87-033-240-019		TERMINAL,SP 4P32SV1-05
J801	87-033-235-019		TERMINAL,ANT (H)
L101	87-003-383-019		COIL,1UH-S
L102	87-003-383-019		COIL,1UH-S
L701	87-003-293-019		COIL,TRAP MPX
L702	87-003-293-019		COIL,TRAP MPX
L741	87-A50-015-019		COIL,FM DET(TOK)
L742	87-A90-051-019		FLTR,CFAZ-450(TOK)
L770	87-003-102-089		COIL,10UH
L832	87-003-098-089		COIL,2.2UH
L981	86-NF4-665-019		AM PACK 1(TOK)
R105	87-022-600-089		RES,M/F 0.1-2W J
R106	87-022-600-089		RES,M/F 0.1-2W J
RY101	87-045-389-019		RELAY,OSA-SS-212DM5
RY102	87-045-382-019		RELAY,OUAZ-SH-112L
SFR722	87-024-352-089		SFR,4.7K DIA6 H
TC701	87-011-253-089		TRIMER,30P LAR
W304	87-064-142-019		HOLD WIRE 15-1.5
X703	84-508-618-019		VIB,CER CSB 456 F15
X721	87-030-372-019		VIB,XTAL 7.2MHZ
FRONT C.B			
C101	87-010-401-049		CAP,E 1-50 SME
C102	87-010-401-049		CAP,E 1-50 SME
C103	87-010-182-089		C-CAP,S 2200P-50 B
C104	87-010-182-089		C-CAP,S 2200P-50 B
C105	87-010-545-049		CAP E 0.22-50 SME
C106	87-010-545-049		CAP E 0.22-50 SME
C107	87-010-993-089		C-CAP,S 0.056-25 B
C108	87-010-993-089		C-CAP,S 0.056-25 B
C109	87-012-393-089		C-CAP,S 0.22-16,R,X
C110	87-012-393-089		C-CAP,S 0.22-16,R,X
C111	87-010-401-049		CAP,E 1-50 SME
C112	87-010-260-049		CAP,E 47-25 SME
C113	87-010-405-049		CAP,E 10-50 SME

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C114	87-010-406-049		CAP,E 22-50 SME
C115	87-010-196-089		C-CAP,S 0.1-25 F
C401	87-010-196-089		C-CAP,S 0.1-25 F
C402	87-010-196-089		C-CAP,S 0.1-25 F
C450	87-010-112-049		CAP,E 100-16
C470	87-010-112-049		CAP,E 100-16
C501	87-010-322-089		C-CAP,S 100P-50 CH
C502	87-010-196-089		C-CAP,S 0.1-25 F
C503	87-010-196-089		C-CAP,S 0.1-25 F
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-196-089		C-CAP,S 0.1-25 F
C602	87-010-545-049		CAP E 0.22-50 SME
C603	87-010-321-089		C-CAP,S 82P-50 CH
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-010-196-089		C-CAP,S 0.1-25 F
C608	87-010-177-089		C-CAP,S 820P-50 SL
C609	87-016-251-049		CAP,E220-16 SMG
C610	87-010-405-049		CAP,E 10-50 SME
C611	87-010-405-049		CAP,E 10-50 SME
C612	87-010-406-049		CAP,E 22-50 SME
C613	87-010-401-049		CAP,E 1-50 SME
C615	87-010-186-089		C-CAP,S 4700P-50 B
C801	87-010-555-049		CAP,E 100-10 GAS
C802	87-010-074-080		CAP,E 4.7-35 5L
C803	87-010-494-049		CAP,E 1-50 GAS
C804	87-A10-189-049		CAP,E 220-10
C805	87-010-196-089		C-CAP,S 0.1-25 F
C806	87-010-196-089		C-CAP,S 0.1-25 F
C821	87-010-312-089		C-CAP,S 15P-50 CH
C822	87-010-180-089		C-CAP,S 1500P-50 B
C823	87-010-498-049		CAP,E 10-16 GAS
C824	87-010-302-080		C-CAP,S 270P-50 CH
C825	87-010-322-089		C-CAP,S 100P-50 CH
C901	87-010-405-049		CAP,E 10-50 SME
C902	87-010-405-049		CAP,E 10-50 SME
C903	87-010-408-049		CAP-E 47-50 SME
FC001	88-904-201-219		FF-CABLE 4P 1.25
FL801	86-NT1-636-019		FL,BJ451GK
J601	82-NF7-630-019		JACK,3.5 MO
J602	82-NF7-630-019		JACK,3.5 MO
L801	87-005-165-089		COIL,1uH MLAL03<U>
L820	87-A50-052-019		COIL,CLOCK 5.76MHZ T1
LED401	87-070-199-089		LED,SLP738F-81-S-T1
LED402	87-070-199-089		LED,SLP738F-81-S-T1
LED403	87-070-199-089		LED,SLP738F-81-S-T1
LED404	87-070-199-089		LED,SLP738F-81-S-T1
LED405	87-070-199-089		LED,SLP738F-81-S-T1
LED406	87-070-199-089		LED,SLP738F-81-S-T1
LED407	87-070-199-089		LED,SLP738F-81-S-T1
LED408	87-070-199-089		LED,SLP738F-81-S-T1
LED409	87-070-199-089		LED,SLP738F-81-S-T1
LED410	87-070-199-089		LED,SLP738F-81-S-T1
LED411	87-070-201-089		LED,SLP9118C-51-S-T1
LED412	87-070-201-089		LED,SLP9118C-51-S-T1
LED413	87-070-201-089		LED,SLP9118C-51-S-T1
LED414	87-070-201-089		LED,SLP9118C-51-S-T1
LED415	87-070-201-089		LED,SLP9118C-51-S-T1
LED421	87-070-198-089		LED,SLP736A-81-S-T1
LED422	87-070-198-089		LED,SLP736A-81-S-T1
LED423	87-070-198-089		LED,SLP736A-81-S-T1
LED424	87-070-198-089		LED,SLP736A-81-S-T1
LED425	87-070-198-089		LED,SLP736A-81-S-T1

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
LED431	87-070-198-089		LED,SLP736A-81-S-T1
LED432	87-070-198-089		LED,SLP736A-81-S-T1
LED433	87-070-198-089		LED,SLP736A-81-S-T1
LED434	87-070-198-089		LED,SLP736A-81-S-T1
LED435	87-070-198-089		LED,SLP736A-81-S-T1
LED436	87-A40-188-089		LED,SLZ736A-17-S-T2
LED437	87-A40-188-089		LED,SLZ736A-17-S-T2
S920	87-A90-095-089		SW,TACT EVQ11G04M
S921	87-A90-095-089		SW,TACT EVQ11G04M
S922	87-A90-095-089		SW,TACT EVQ11G04M
S923	87-A90-095-089		SW,TACT EVQ11G04M
S924	87-A90-095-089		SW,TACT EVQ11G04M
S925	87-A90-095-089		SW,TACT EVQ11G04M
S926	87-A90-095-089		SW,TACT EVQ11G04M
S927	87-A90-095-089		SW,TACT EVQ11G04M
S928	87-A90-095-089		SW,TACT EVQ11G04M
S932	87-A90-095-089		SW,TACT EVQ11G04M
S933	87-A90-095-089		SW,TACT EVQ11G04M
S934	87-A90-095-089		SW,TACT EVQ11G04M
S935	87-A90-095-089		SW,TACT EVQ11G04M
S936	87-A90-095-089		SW,TACT EVQ11G04M
VR101	83-SP2-612-019		VR,10KB SQ11
VR601	87-A90-124-019		VR,RTRY 10KA L20

MVR C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C201	87-010-405-089		CAP,E 10-50 SME
C202	87-010-405-089		CAP,E 10-50 SME
C203	87-010-404-089		CAP,E 4.7-50 SME
C204	87-010-404-089		CAP,E 4.7-50 SME
C205	87-010-263-089		CAP,E 100-10 SME 5X11
C206	87-010-263-089		CAP,E 100-10 SME 5X11
C207	87-010-318-089		C-CAP,S 47P-50 CH
C208	87-010-318-089		C-CAP,S 47P-50 CH
C209	87-016-461-089		C-CAP,S 0.47-25 F
C210	87-010-197-089		C-CAP,S 0.01-25 B
C211	87-010-179-089		C-CAP,S 1200P-50 B
C212	87-010-196-089		C-CAP,S 0.1-25 F
C213	88-707-789-819		CAP, M 0.33-50 J TF
C214	88-707-789-819		CAP, M 0.33-50 J TF
C215	87-010-196-089		C-CAP,S 0.1-25 F
C216	87-010-187-089		C-CAP,S 5600P-50 B
C217	87-010-182-089		C-CAP,S 2200P-50 B
C218	87-012-393-089		C-CAP,S 0.22-16,R,K
C219	87-010-194-089		C-CAP,S 0.047-25 F
C220	87-010-182-089		C-CAP,S 2200P-50 B
C221	87-010-196-089		C-CAP,S 0.1-25 F
C222	87-010-179-089		C-CAP,S 1200P-50 B
C223	87-010-177-089		C-CAP,S 820P-50 SL
C280	87-010-196-089		C-CAP,S 0.1-25 F
C285	87-010-263-089		CAP,E 100-10 SME 5X11
C286	87-010-384-089		CAP,E 100-25 SME
C301	87-010-402-049		CAP,E 2.2-50 SME
C302	87-010-402-049		CAP,E 2.2-50 SME
C303	87-010-404-049		CAP,E 4.7-50 SME
C304	87-010-404-049		CAP,E 4.7-50 SME
L201	87-005-481-089		COIL,47UH J FLR50
MVR281	86-NT1-633-019		VR,MOT 50KBX2 -L20

TRAY C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
S937	87-A90-095-089		SW,TACT EVQ11G04M
S938	87-A90-095-089		SW,TACT EVQ11G04M
S939	87-A90-095-089		SW,TACT EVQ11G04M

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
S940	87-A90-095-089		SW,TACT EVQ11G04M
S941	87-A90-095-089		SW,TACT EVQ11G04M
S942	87-A90-095-089		SW,TACT EVQ11G04M
S945	87-036-110-019		SW,PUSH SPPB 62
S946	87-A90-095-089		SW,TACT EVQ11G04M
S947	87-A90-095-089		SW,TACT EVQ11G04M
S948	87-A90-095-089		SW,TACT EVQ11G04M
S949	87-A90-095-089		SW,TACT EVQ11G04M
S950	87-A90-095-089		SW,TACT EVQ11G04M
S951	87-A90-095-089		SW,TACT EVQ11G04M
S952	87-A90-095-089		SW,TACT EVQ11G04M
S953	87-A90-095-089		SW,TACT EVQ11G04M
S954	87-A90-095-089		SW,TACT EVQ11G04M
S955	87-036-110-019		SW,PUSH SPPB 62

AC-2 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠PR101	87-A90-210-089		PROTECTOR 7A125V251<U>
⚠PR101	87-A90-195-089		PROTECTOR 7A125V491<EXCEPT U>
⚠PR102	87-A90-210-089		PROTECTOR 7A125V251<U>
⚠PR102	87-A90-195-089		PROTECTOR 7A125V491<EXCEPT U>

AC-1 C.B<U>

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠	87-033-213-089		CLAMP FUSE SMK<U>
⚠	82-304-743-019		TERMINAL 1P<U>
⚠F101	87-035-192-019		FUSE,4A 250V<U>
⚠PT103	86-NT1-607-019		PT,6NT1-U<U>

PT-H C.B<EXCEPT U>

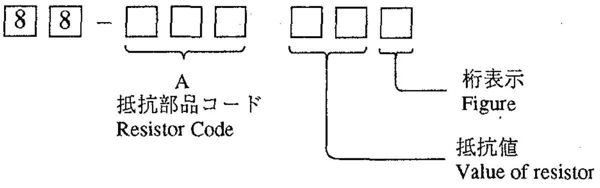
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠	82-304-743-019		TERMINAL 1P<EXCEPT U>
⚠F101	87-035-192-019		FUSE,4A 250V<EXCEPT U>
⚠PT103	86-NT1-606-019		PT,6NT1-HR<HEJ,HRJ>
⚠PT103	86-NT1-609-019		PT,6NT1-LH<LH>
⚠SW101	87-036-387-019		SW,SL 1-2-3<EXCEPT U>

MOTOR C.B

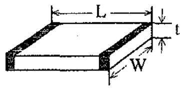
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C970	87-010-263-089		CAP,E 100-10 SME 5X11
C971	87-010-263-089		CAP,E 100-10 SME 5X11

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

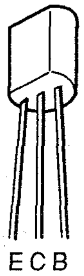
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



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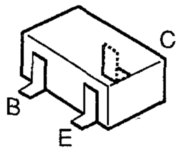
2SA1318
2SC3266
2SD655
KTA1266
KTC3198



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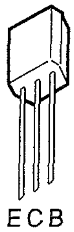
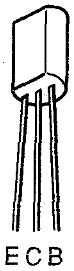
2SC2412
2SC2712
2SC2714
2SC3326
2SC3722
2SD2114
DTA124EK
DTA143EK
DTA144EK
DTC144EK



DTA114YS



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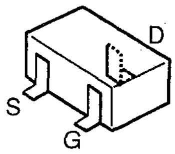
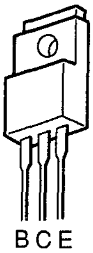
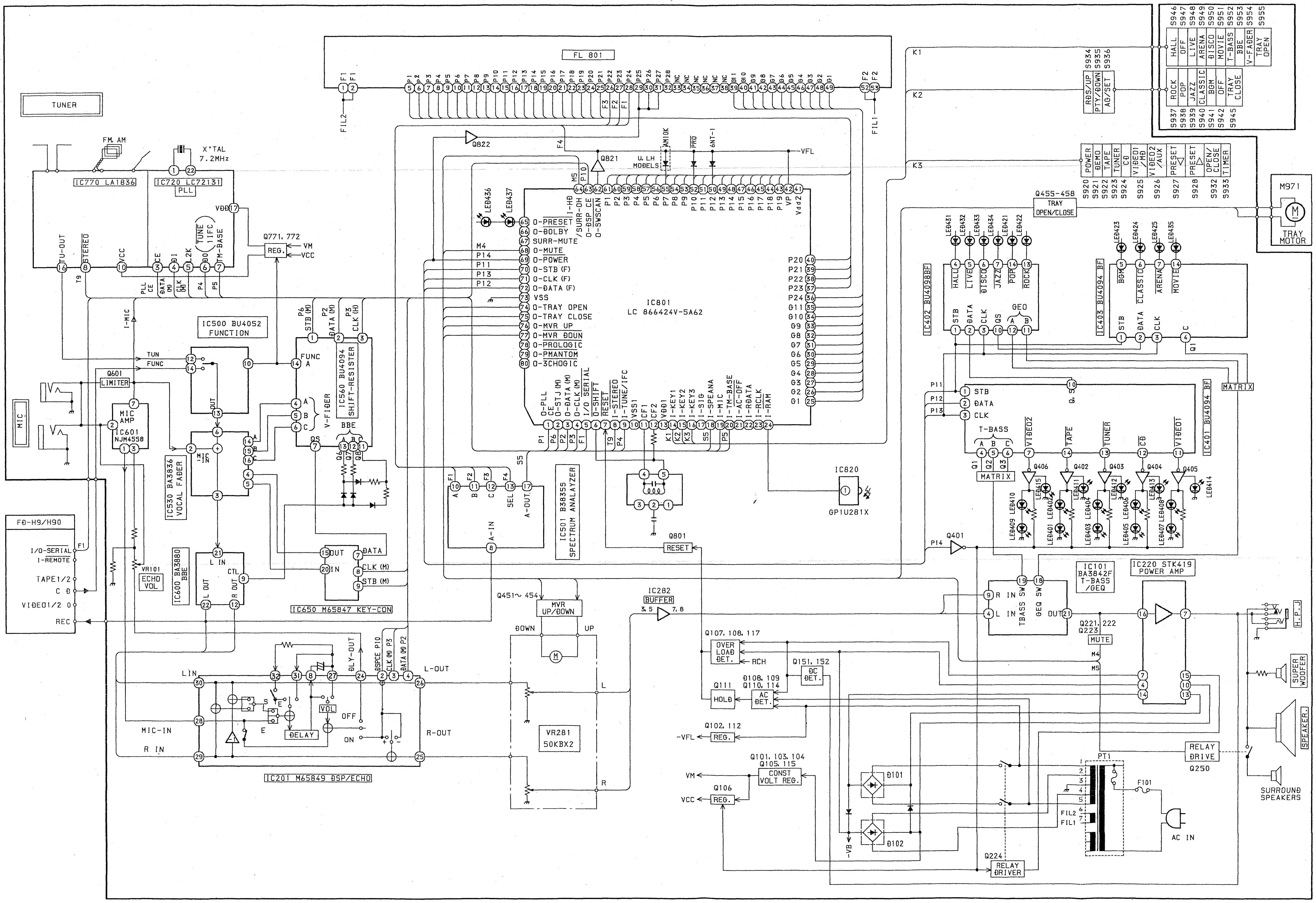


2SK543

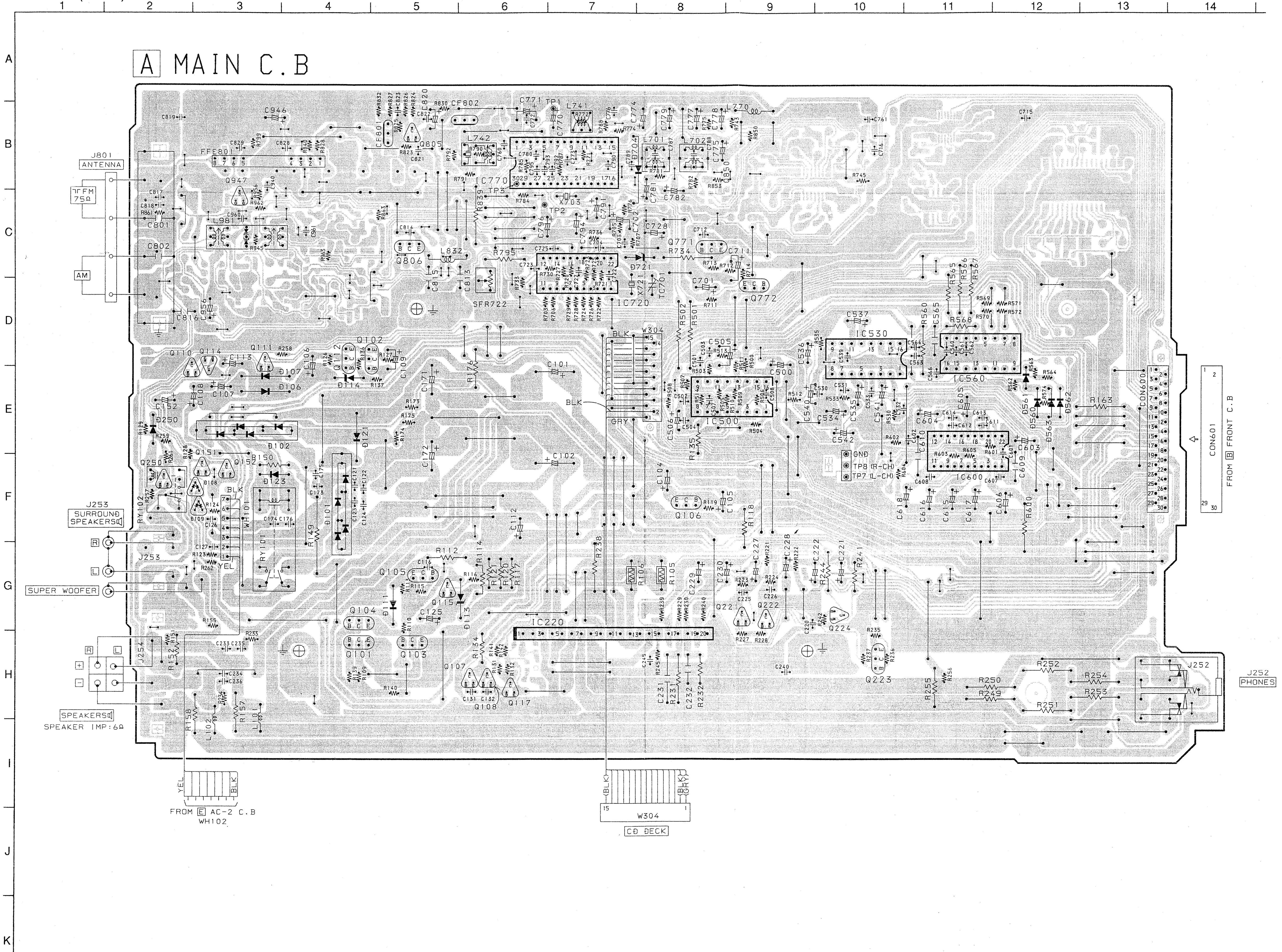


2SB1370

BLOCK DIAGRAM


FL 801
TUNER
FM, AM
X'TAL 7.2MHz
IC770 LA1836
IC720 LC72131 PLL
Q771, 772 REG.
VM
VCC
IC500 BU4052 FUNCTION
IC560 BU4094 SHIFT-RESISTER
V-FIDER
BBE
Q601 LIMITER
MIC AMP IC601 NJM4558
MIC
IC530 BA3836 VOCAL FADER
IC600 BA3880 BBE
VR101 ECHO VOL
IC650 M65847 KEY-CON
FD-H9/H90
I/O-SERIAL
I-REMOTE
TAPE1/2
CD
VIDEO1/2
REC
IC201 M65849 DSP/ECHO
LIN
MIC-IN
R IN
L-OUT
R-OUT
DELAY
VOL
OFF
ON
IC501 B3835S SPECTRUM ANALYZER
Q451~454 MVR UP/DOWN
DOWN
UP
VR281 50KBX2
IC282 BUFFER
IC801 LC 866424V-5A62
Q822
Q821
U, LH MODELS
VFL
O-PRESET
O-DOLBY
SURR-MUTE
O-MUTE
O-POWER
O-STB (F)
O-CLK (F)
O-DATA (F)
VSS
O-TRAY OPEN
O-TRAY CLOSE
O-MVR UP
O-MVR DOWN
O-PROLOGIC
O-PMANTOM
O-3CHOGIC
Q801 RESET
IC820 GP1U281X
K1
K2
K3
RDS/UP S934
PTY/DOWN S935
AG/SET S936
ROCK S937
POP S938
JAZZ S939
CLASSIC S940
BGM S941
OFF S942
TRAY CLOSE S945
HALL S946
OFF S947
LIVE S948
ARENA S949
DISCO S950
MOVIE S951
T-BASS S952
BBE S953
V-FADER S954
TRAY OPEN S955
POWER S920
DEMO S921
TAPE S922
TUNER S923
CD S924
VIDEO1/MD S925
VIDEO2/AUX S926
PRESET S927
PRESET S928
OPEN/CLOSE S932
TIMER S933
Q455-458 TRAY OPEN/CLOSE
M971
TRAY MOTOR
IC402 BU4098BF
IC403 BU4094 BF
IC401 BU4094 BF
MATRIX
T-BASS
Q401
IC101 BA3842F T-BASS/GEQ
IC220 STK419 POWER AMP
Q221, 222 Q223 MUTE
H.P.J
SUPER WOOFER
SPEAKER
SURROUND SPEAKERS
RELAY DRIVE Q250
Q107, 108, 117 OVER LOAD DET.
RCH
Q151, 152 DC DET.
Q111 HOLD
D108, 109 Q110, 114 AC DET.
Q102, 112 REG.
-VFL
Q101, 103, 104 Q105, 115 CONST VOLT REG.
VM
Q106 REG.
VCC
D101
D102
-VB
PT1
F101
AC IN
FIL2
FIL1
Q224 RELAY DRIVER

WIRING-1 (MAIN)


1
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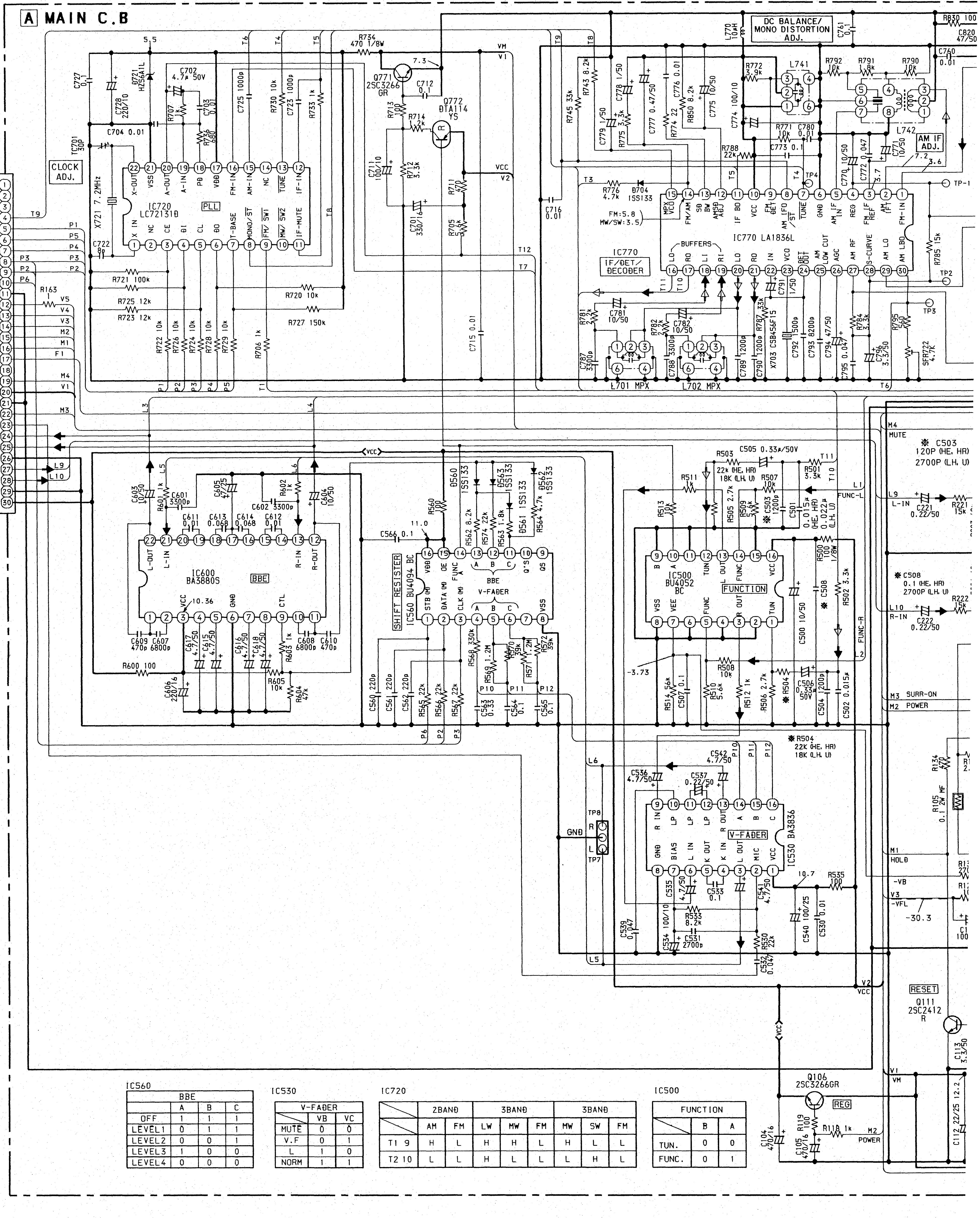
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
A MAIN C.B
J801
ANTENNA
FM 75Ω
AM
J253
SURROUND SPEAKERS
R
L
SUPER WOOFER
J254
R
L
+
−
SPEAKERS
SPEAKER IMP:6Ω
YEL
BLK
FROM E AC-2 C.B
WH102
BLK
GRY
W304
15
1
CD DECK
IC770
IC720
IC220
IC500
IC530
IC560
IC600
CON600
CON601
FROM B FRONT C.B
1
2
29
30
GND
TP8 (R-CH)
TP7 (L-CH)
J252
PHONES

SCHEMATIC DIAGRAM-1 (MAIN)



A MAIN C.B
CON600
SIG.
RDDA
RDCL
STEREO
PLL-CE
T-BASE
TUNE/IFC
CLK (M)
DATA (M)
STB (M)
D-GND
FIL-2
FIL-1
-VFL
POWER
HOLD
I/O SERIAL
REMOTE
MUTE
VM
D-GND
I-HP/SURR-ON
MIC
L-IN
R-IN
A-GND
L-OUT
R-OUT
A-GND
VCC
FROM B FRONT C.B CON601
CLOCK ADJ.
IC720 LC72131D
PLL
X721 7.2MHz
Q771 2SC3266 GR
Q772 DTA114 YS
R734 470 1/8W
DC BALANCE/ MONO DISTORTION ADJ.
L741
L742
AM IF ADJ.
IC770 LA1836L
IC770 IF/DET/ DECODER
BUFFERS
L701 MPX
L702 MPX
FM:5.8
MW/SW:3.5
IC600 BA3880S
BBE
SHIFT RESISTER
IC560 BU4094 BC
V-FADER
IC500 BU4052 BC
FUNCTION
IC530 BA3836
V-FADER
TP8
TP7
GND
RESET
Q111 2SC2412 R
Q106 2SC3266GR
REG
※ C503 120P (HE, HR) 2700P (LH, U)
※ C508 0.1 (HE, HR) 2700P (LH, U)
※ R504 22K (HE, HR) 18K (LH, U)
SURR-ON
POWER
HOLD
-VB
-VFL
-30.3

IC560

	BBE		
	A	B	C
OFF	1	1	1
LEVEL1	0	1	1
LEVEL2	0	0	1
LEVEL3	1	0	0
LEVEL4	0	0	0

IC530

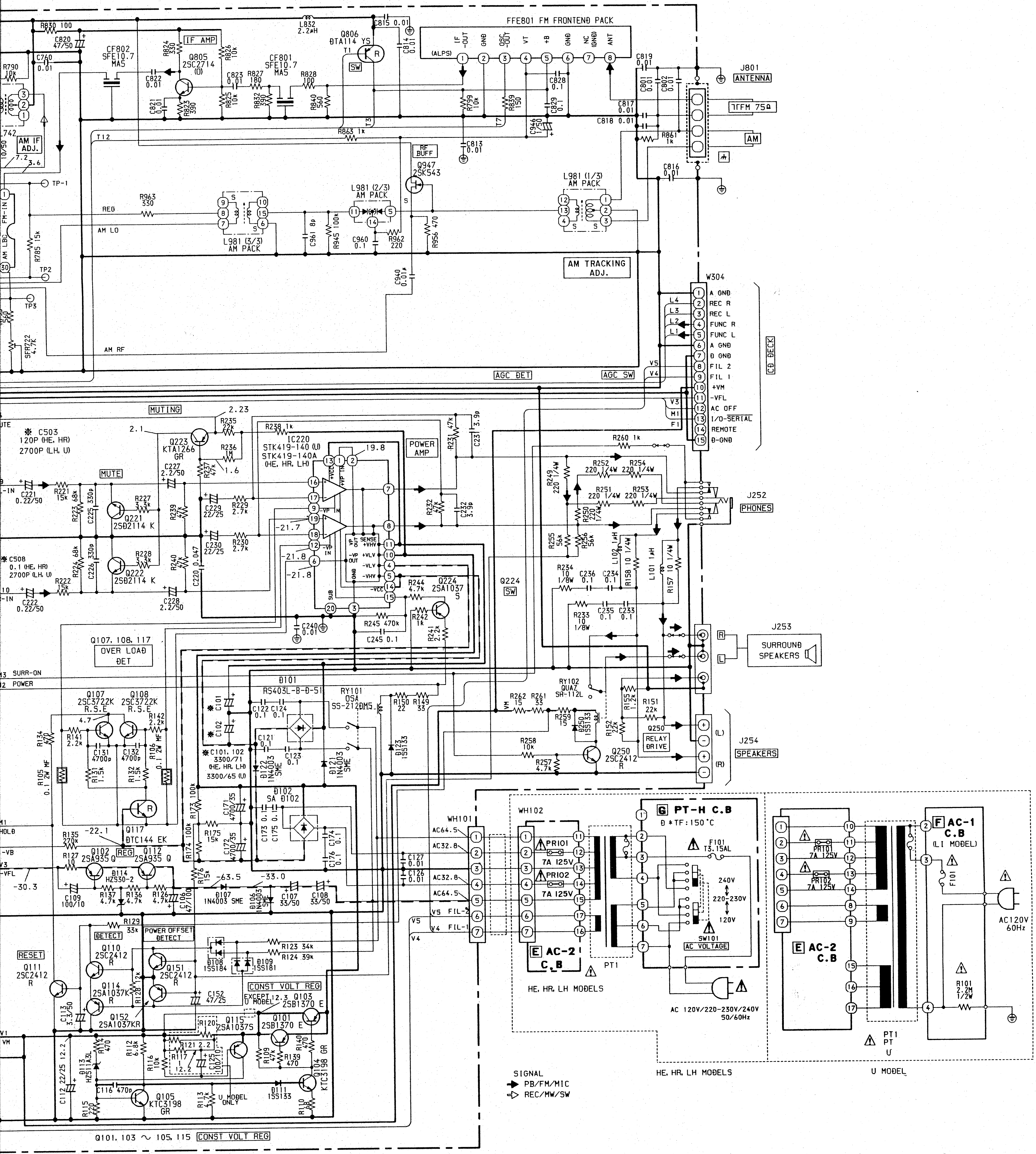
V-FADER		
	VB	VC
MUTE	0	0
V.F	0	1
L	1	0
NORM	1	1

IC720

	2BAND		3BAND			3BAND		
	AM	FM	LW	MW	FM	MW	SW	FM
T1 9	H	L	H	H	L	H	L	L
T2 10	L	L	H	L	L	L	H	L

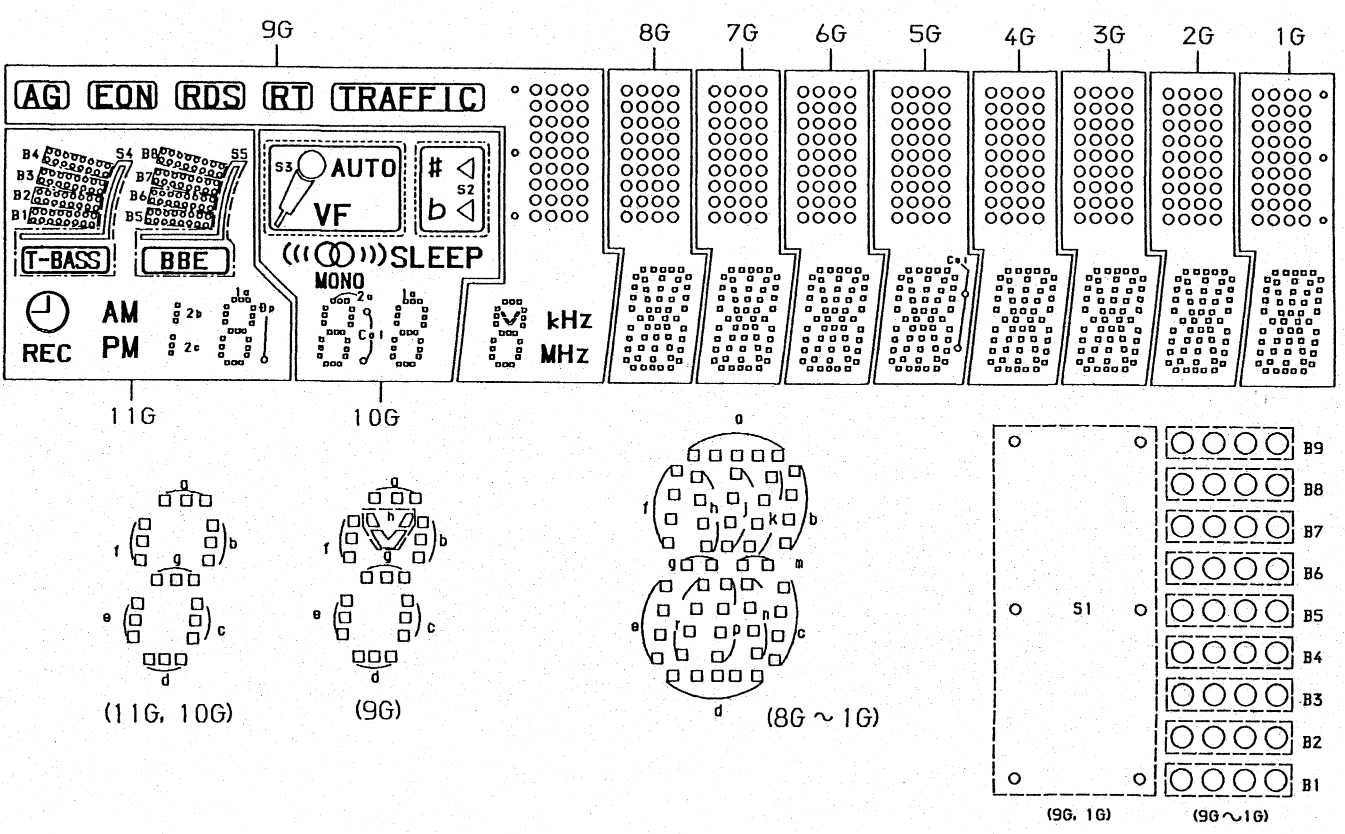
IC500

	FUNCTION	
	B	A
TUN.	0	0
FUNC.	0	1


FFE801 FM FRONTEND PACK
IF -OUT
GND
OSC -OUT
VT
+B
GND
NC (GND)
ANT
(ALPS)
J801
ANTENNA
FM 75Ω
AM
IF AMP
Q805 2SC2714 (O)
CF802 SFE10.7 MA5
CF801 SFE10.7 MA5
Q806 DTA114 YS
L832 2.2μH
AM IF ADJ.
TP-1
TP2
TP3
RF BUFF
Q947 2SK543
L981 (2/3) AM PACK
L981 (1/3) AM PACK
L981 (3/3) AM PACK
REG
AM LO
AM RF
AM TRACKING ADJ.
AGC DET
AGC SW
W304
A GND
REC R
REC L
FUNC R
FUNC L
A GND
D GND
FIL 2
FIL 1
+VM
-VFL
AC OFF
I/O-SERIAL
REMOTE
D-GND
CD DECK
MUTING
MUTE
Q223 KTA1266 GR
IC220 STK419-140 (U) STK419-140A (HE, HR, LH)
POWER AMP
※ C503 120P (HE, HR) 2700P (LH, U)
※ C508 0.1 (HE, HR) 2700P (LH, U)
Q221 2SD2114 K
Q222 2SD2114 K
Q224 SW
Q224 2SA1037 S
J252 PHONES
J253 SURROUND SPEAKERS
J254 SPEAKERS
RY102 QUAZ SH-112L
RELAY DRIVE
Q250 2SC2412 R
Q107, 108, 117 OVER LOAD DET
SURR-ON
POWER
Q107 2SC3722K R.S.E
Q108 2SC3722K R.S.E
Q117 DTC144 EK
D101 RS403L-B-D-51
RY101 OSA SS-212DM5
※C101, 102 3300/71 (HE, HR, LH) 3300/65 (U)
D102 SA D102
Q102 2SA935 Q
Q112 2SA935 Q
REG
D114 HZS30-2
DETECT
POWER OFFSET DETECT
RESET
Q110 2SC2412 R
Q111 2SC2412 R
Q114 2SA1037K R
Q151 2SC2412 R
Q152 2SA1037KR
CONST VOLT REG
EXCEPT 1, 2, 3 U MODEL
Q103 2SB1370 E
Q101 2SB1370 E
Q115 2SA1037S
Q104 KTC3198 GR
Q105 KTC3198 GR
D113 HZ5.1A3L
D111 1SS133
U MODEL ONLY
Q101, 103 ~ 105, 115 CONST VOLT REG
WH101
WH102
AC64.5
AC32.8
V5 FIL-2
V4 FIL-1
E AC-2 C.B
PR101 7A 125V
PR102 7A 125V
HE, HR, LH MODELS
G PT-H C.B
D *TF: 150°C
F101 T3.15AL
240V
220-230V
120V
SW101 AC VOLTAGE
AC 120V/220-230V/240V 50/60Hz
PT1
HE, HR, LH MODELS
E AC-2 C.B
F AC-1 C.B (LI MODEL)
F101
AC120V 60Hz
R101 2.2M 1/2W
PT1 PT U
U MODEL
SIGNAL
PB/FM/MIC
REC/MW/SW

FL (BJ451GK) GRID ASSIGNMENT ／ ANODE CONNECTION

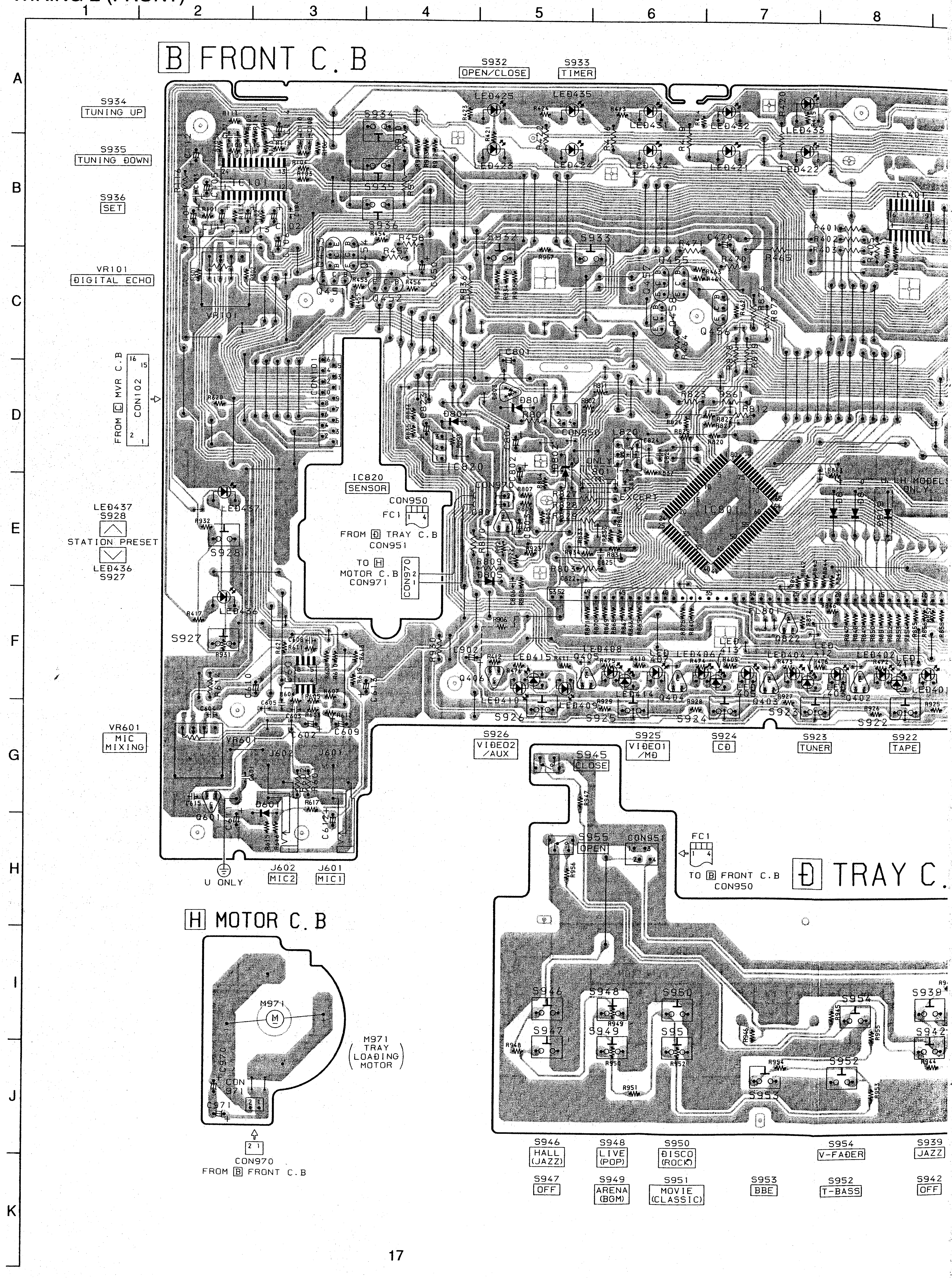
GRID ASSIGNMENT


9G
8G
7G
6G
5G
4G
3G
2G
1G
AG
EON
RDS
RT
TRAFFIC
S4
B8
S5
B4
B3
B2
B1
B7
B6
B5
T-BASS
BBE
S3
AUTO
VF
#
◁
S2
b
((ↀ))SLEEP
MONO
AM
PM
REC
kHz
MHz
11G
10G
a
b
c
d
e
f
g
h
j
k
m
n
p
r
(11G, 10G)
(9G)
(8G ~ 1G)
S1
B9
B8
B7
B6
B5
B4
B3
B2
B1
(9G, 1G)
(9G~1G)

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	2b, 2c	S3	B9	B9	B9	B9	B9	B9	B9	B9	B9
P2	1a	**AUTO**	B8	B8	B8	B8	B8	B8	B8	B8	B8
P3	1b	◁(High)	B7	B7	B7	B7	B7	B7	B7	B7	B7
P4	1f	◁(Low)	B6	B6	B6	B6	B6	B6	B6	B6	B6
P5	1g	((ↀ))	B5	B5	B5	B5	B5	B5	B5	B5	B5
P6	1c	**SLEEP**	B4	B4	B4	B4	B4	B4	B4	B4	B4
P7	1e	**MONO**	B3	B3	B3	B3	B3	B3	B3	B3	B3
P8	1d	○	B2	B2	B2	B2	B2	B2	B2	B2	B2
P9	–	2a	B1	B1	B1	B1	B1	B1	B1	B1	B1
P10	–	2b	**TRAFFIC**	a	a	a	a	a	a	a	a
P11	B8	2f	**R T**	h	h	h	h	h	h	h	h
P12	B7	2g	**RDS**	j	j	j	j	j	j	j	j
P13	B6	2c	**EON**	k	k	k	k	k	k	k	k
P14	B5	2e	**A G**	b	b	b	b	b	b	b	b
P15	B4	2d	h	f	f	f	f	f	f	f	f
P16	B3	1a	a	m	m	m	m	m	m	m	m
P17	B2	1b	b	g	g	g	g	g	g	g	g
P18	B1	1f	f	c	c	c	c	c	c	c	c
P19	**AM**	1g	g	e	e	e	e	e	e	e	e
P20	**PM**	1c	c	r	r	r	r	r	r	r	r
P21	◷	1e	e	p	p	p	p	p	p	p	p
P22	**REC**	1d	d	n	n	n	n	n	n	n	n
P23	–	Col (Low)	**KHz**	d	d	d	d	d	d	d	d
P24	Dp	Col (High)	**MHz**	–	–	–	col	–	–	–	–
P25	–	–	S1	–	–	–	–	–	–	–	S1
P26	S4	–	–	–	–	–	–	–	–	–	–
P27	S5	–	–	–	–	–	–	–	–	–	–
P28	–	S2	–	–	–	–	–	–	–	–	–

WIRING-2 (FRONT)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A
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C
D
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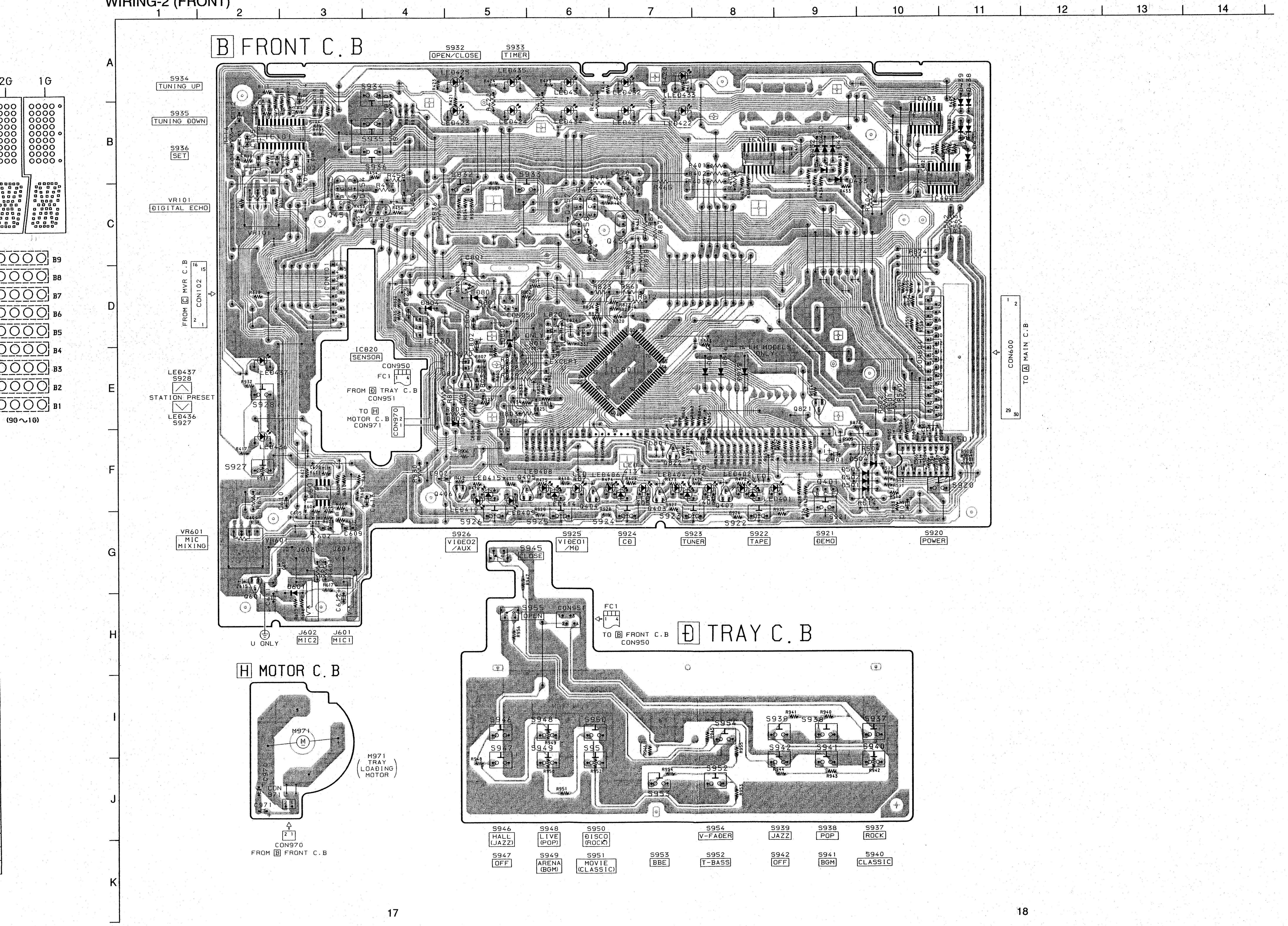
F
G
H
I
J
K
B FRONT C.B
S932
OPEN/CLOSE
S933
TIMER
S934
TUNING UP
S935
TUNING DOWN
S936
SET
VR101
DIGITAL ECHO
FROM C MVR C.B
CON102
LED437
S928
STATION PRESET
LED436
S927
VR601
MIC MIXING
IC820
SENSOR
CON950
FC1
FROM D TRAY C.B
CON951
TO H MOTOR C.B
CON971
CON970
IC801
IC101
S926
VIDEO2 /AUX
S925
VIDEO1 /MD
S924
CD
S923
TUNER
S922
TAPE
S945
CLOSE
S955
OPEN
CON951
FC1
TO B FRONT C.B
CON950
D TRAY C.
U ONLY
J602
MIC2
J601
MIC1
H MOTOR C.B
M971
M971
TRAY LOADING MOTOR
CON970
FROM B FRONT C.B
S946
HALL (JAZZ)
S948
LIVE (POP)
S950
DISCO (ROCK)
S954
V-FADER
S939
JAZZ
S947
OFF
S949
ARENA (BGM)
S951
MOVIE (CLASSIC)
S953
BBE
S952
T-BASS
S942
OFF

WIRING-2 (FRONT)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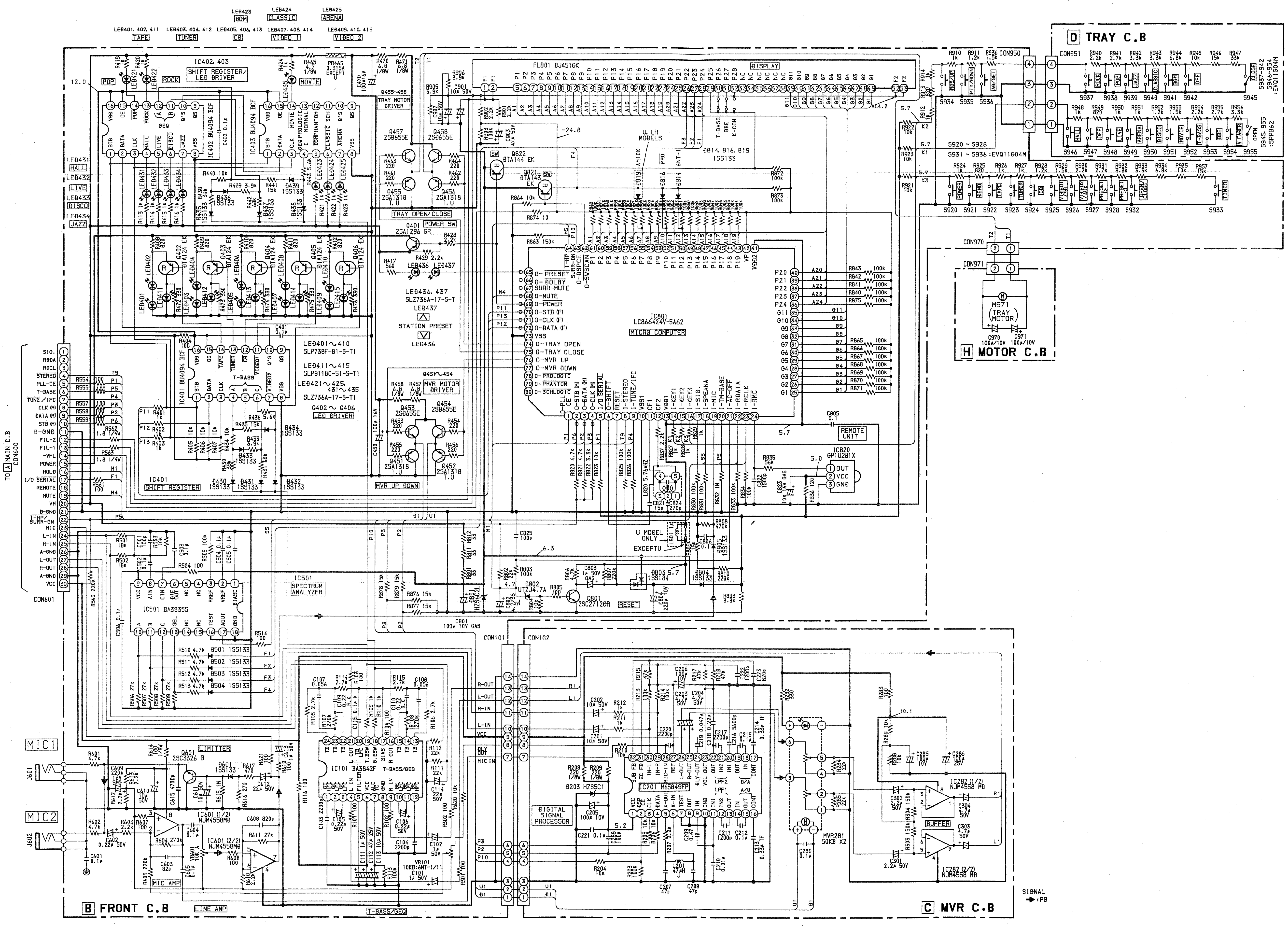
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
2G
1G
B9
B8
B7
B6
B5
B4
B3
B2
B1
(9G~1G)
B FRONT C.B
S932 OPEN/CLOSE
S933 TIMER
S934 TUNING UP
S935 TUNING DOWN
S936 SET
VR101 DIGITAL ECHO
FROM C MVR C.B CON102
IC101
IC401
IC402
IC403
IC820 SENSOR
CON950
FC1
FROM D TRAY C.B CON951
TO H MOTOR C.B CON971
CON970
IC801
LH MODELS ONLY
EXCEPT
CON101
CON600 TO A MAIN C.B
LED437
S928
STATION PRESET
LED436
S927
VR601 MIC MIXING
J602 MIC2
J601 MIC1
U ONLY
S926 VIDEO2 /AUX
S925 VIDEO1 /MD
S924 CD
S923 TUNER
S922 TAPE
S921 DEMO
S920 POWER
S945 CLOSE
S955 OPEN
CON951
FC1
TO B FRONT C.B CON950
D TRAY C.B
H MOTOR C.B
M971
M971 TRAY LOADING MOTOR
CON 971
CON970
FROM B FRONT C.B
S946 HALL (JAZZ)
S948 LIVE (POP)
S950 DISCO (ROCK)
S954 V-FADER
S939 JAZZ
S938 POP
S937 ROCK
S947 OFF
S949 ARENA (BGM)
S951 MOVIE (CLASSIC)
S953 BBE
S952 T-BASS
S942 OFF
S941 BGM
S940 CLASSIC

SCHEMATIC DIAGRAM-2 (FRONT)

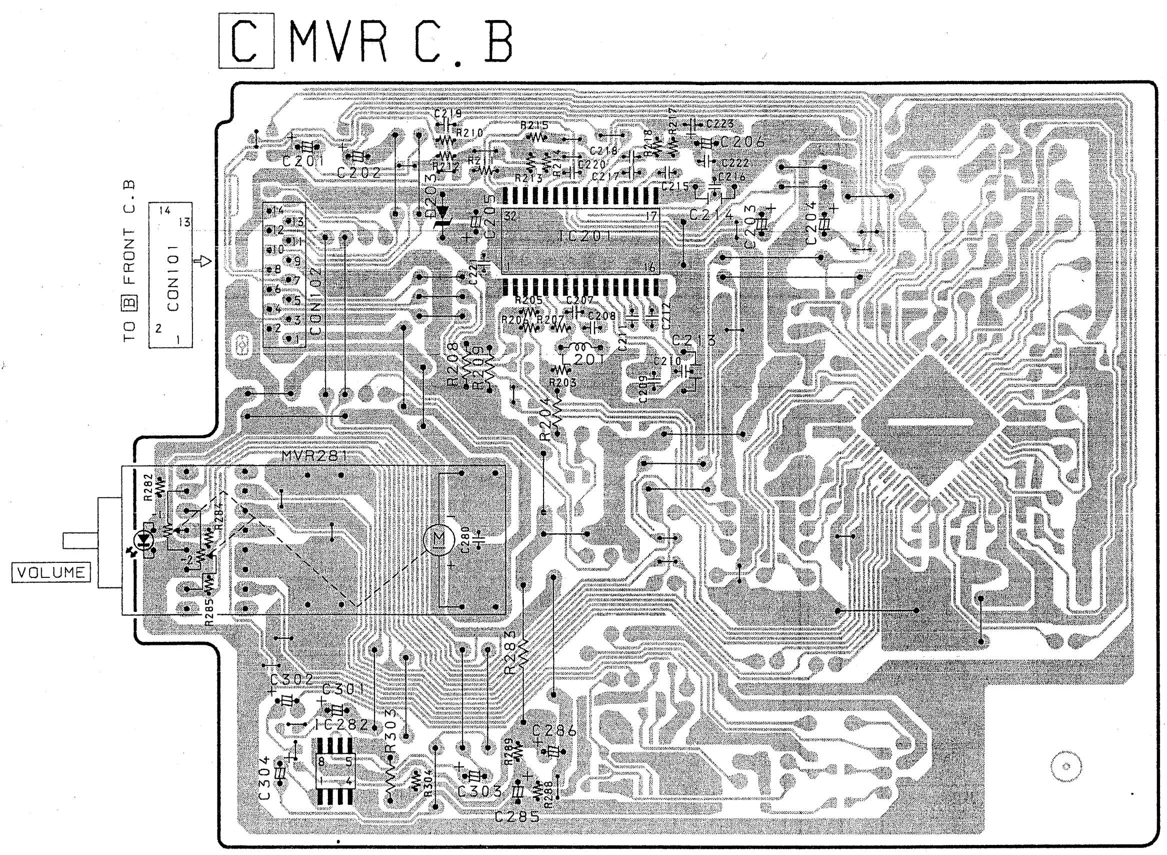


LE8423 BGM
LE8424 CLASSIC
LE8425 ARENA
LE8401, 402, 411 TAPE
LE8403, 404, 412 TUNER
LE8405, 406, 413 CD
LE8407, 408, 414 VIDEO 1
LE8409, 410, 415 VIDEO 2
IC402, 403 SHIFT REGISTER/LED DRIVER
POP
ROCK
MOVIE
LE8431 HALL
LE8432 LIVE
LE8433 DISCO
LE8434 JAZZ
IC402 BU4094 BCF
IC403 BU4094 BCF
Q455~458 TRAY MOTOR DRIVER
Q457 2SD655E
Q458 2SD655E
Q455 2SA1318
Q456 2SA1318
TRAY OPEN/CLOSE
Q401 2SA1296 GR
POWER SW
FL801 BJ4510K
DISPLAY
Q822 DTA144 EK
Q821 DTA143 EK
U, LH MODELS
D814, 816, 819 1SS133
IC801 LC866424V-5A62
MICRO COMPUTER
LE8434, 437 SLZ736A-17-S-T
LE8437
STATION PRESET
LE8436
LE8401~410 SLP738F-81-S-T1
LE8411~415 SLP9118C-51-S-T1
LE8421~425, 431~435 SLZ736A-17-S-T1
Q402~Q406 LED DRIVER
Q451~454 MVR MOTOR DRIVER
Q453 2SD655E
Q454 2SD655E
Q451 2SA1318
Q452 2SA1318
MVR UP DOWN
IC401 BU4094 BCF
IC401 SHIFT REGISTER
T-BASS
REMOTE UNIT
IC820 GP1U281X
U MODEL ONLY
EXCEPTU
Q801 2SC2712GR
RESET
Q802 UTZJ4.7A
IC501 SPECTRUM ANALYZER
IC501 BA3835S
TO A MAIN C.B CON600
CON601
CON101
CON102
IC101 BA3842F T-BASS/GEQ
T-BASS/GEQ
DIGITAL SIGNAL PROCESSOR
IC201 M65849FP
MVR281 50KB X2
IC282 (1/2) NJM4558 MD
IC282 (2/2) NJM4558 MD
BUFFER
MIC1
MIC2
J601
J602
Q601 2SC3326 B
LIMITTER
IC601 (1/2) NJM4558MD
IC601 (2/2) NJM4558MD
MIC AMP
LINE AMP
B FRONT C.B
C MVR C.B
D TRAY C.B
CON951
CON950
S937~942
S946~954 :EVQ11G04M
S945, 955 :SPPB62
S920~S928
S931~S936 :EVQ11G04M
CON970
CON971
M971 (TRAY MOTOR)
H MOTOR C.B
SIGNAL :PB

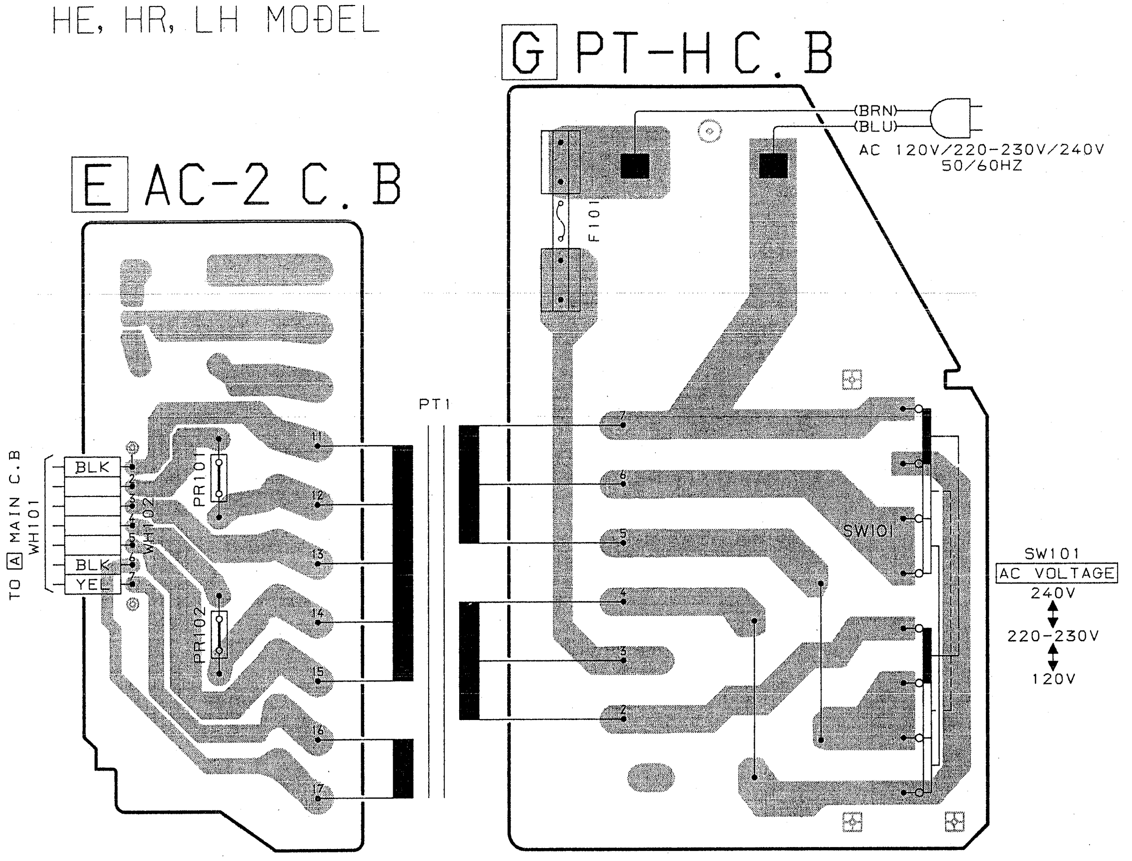
WIRING-3 (MVR)

1 2 3 4 5 6 7 8 9 10 11 12 13 14

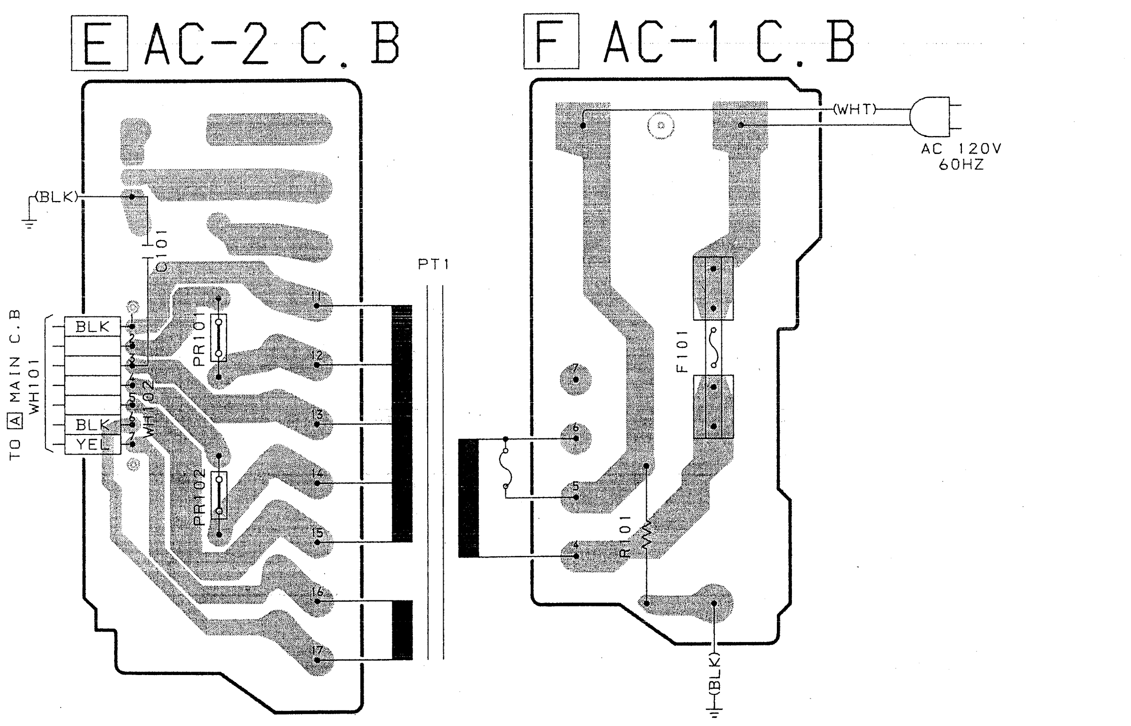
A B C D E F G H I J K


C MVR C.B
TO B FRONT C.B
CON101
14
13
2
1
CON102
VOLUME
MVR281
R282
R284
R285
IC201
IC202
C201
C202
C203
C204
C205
C206
C207
C208
C209
C210
C211
C212
C213
C214
C215
C216
C217
C218
C219
C220
C222
C223
R201
R203
R204
R205
R207
R208
R209
R210
R211
R212
R213
R215
R216
R217
D201
D202
D203
C280
C282
C285
C286
C301
C302
C303
C304
R283
R289
R301
R303
R304
M

HE, HR, LH MODEL


E AC-2 C.B
G PT-H C.B
TO A MAIN C.B
WH101
WH102
BLK
BLK
YEL
PR101
PR102
PT1
11
12
13
14
15
16
17
1
2
3
4
5
6
7
F101
SW101
(BRN)
(BLU)
AC 120V/220-230V/240V
50/60HZ
SW101
AC VOLTAGE
240V
220-230V
120V

U MODEL


E AC-2 C.B
F AC-1 C.B
(BLK)
C101
TO A MAIN C.B
WH101
WH102
BLK
BLK
YEL
PR101
PR102
PT1
11
12
13
14
15
16
17
4
5
6
7
F101
R101
(WHT)
AC 120V
60HZ
(BLK)

IC DESCRIPTION

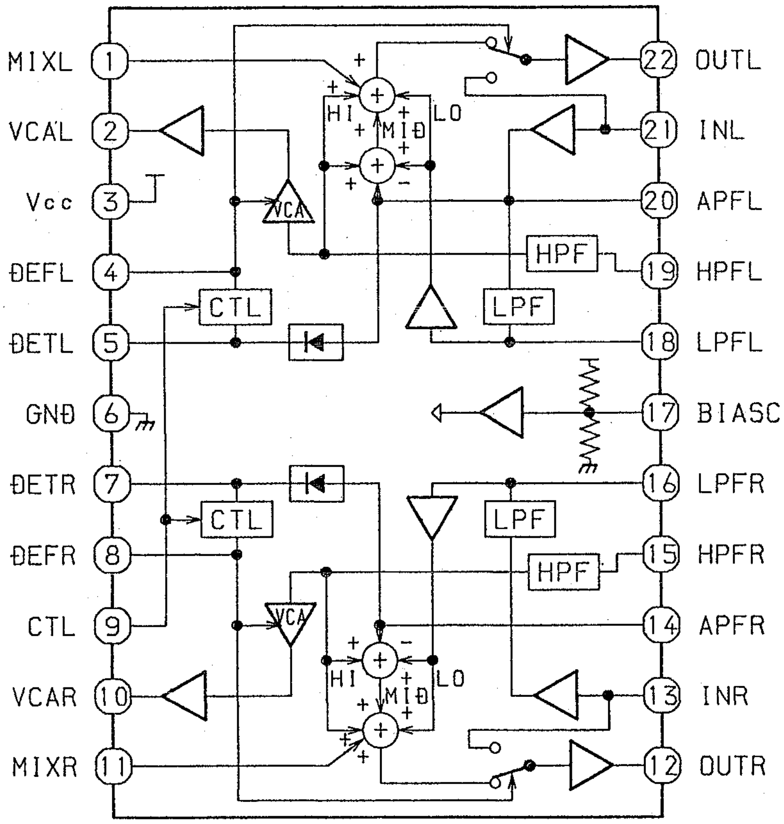
IC, LC866424V-5A62

Pin No.	Pin Name	I/O	Description
1	O-PLLCE	O	PLL IC chip enable output.
2	O-STB(M)	O	Main shift register,data latch strobe output.
3	O-DATA(M)	O	Main shift register/PLL/DSP related,data output.
4	O-CLK(M)	O	Main shift register/PLL/DSP related,data transfer clock output.
5	I/O SERIAL	I/O	FD microprocessor,I/O serial.
6	O-SHIFT	O	Microprocessor clock shift output during tuner reception.
7	RESET	I	Reset input(Reset at "L").
8	I-STEREO	I	Tuner stereo sensing input.
9	I-TUNE/IFC	I	Tuner,SD sensing input/IF count serial data input.
10	VSS 1	-	GND.
11	CF 1	-	5.76 MHz oscillator.
12	CF 2	-	5.76 MHz oscillator.
13	VDD 1	-	Power supply input.
14~16	I-KEY 1~3	I	Key 1~Key 3 A/D input.
17	I-SIG	I	Signal level A/D input for RDS.(Not used)
18	I-SPEANA	I	Spectrum analyzer level A/D input.
19	I-MIC	I	Mic level A/D input for auto vocal fader.
20	I-TMBASE	I	Reference clock input for watch(Automatically supporting 8/50/60 Hz).
21	I-AC OFF	I	Power failure sensing input(Hold at"L").
22	I-RDSDA	I	Data input for RDS.(Not used)
23	I-RDSCL	I	Clock input for RDS.(Not used)
24	I-RMC	I	System remote control input(active Low).
25~35	G11~G1	O	FL grid output(G11~G1).
36~40	S24~S20	O	FL segment output(S24~S20).
41	VDD 2	-	Poewr supply input.
42	VP	-	Power supply for display.
43~48	S19~S14	O	FL segment output(S19~S14).
49	S13	O	FL segment output/Diode input supporting OIRT.
50	S12	O	FL segment output/Diode input supporting.
51	S11	O	FL segment output/Diode input supporting NTSC.
52	S10	O	FL segment output/Diode input supporting PRO.
53	S9	O	FL segment output/Diode input supporting LW.
54	S8	O	FL segment output/Diode input supporting SW.
55	S7	O	FL segment output/Diode input supporting AM 10K.
56	S6	O	FL segment output/Diode input supporting AM STEREO.
57	S5	O	FL segment output/Diode input supporting FM JPN.
58	S4	O	FL segment output/Diode input supporting RDS.
59	S3	I/O	FL segment output/Diode input supporting BBE.
60	S2	I/O	FL segment output/Diode input supporting DSP.
61	S1	I/O	FL segment output/Diode input supporting K-CON.
62	O-SWSCAN	O	CD turntable reverse direction rotation output/SW scan(timing output).

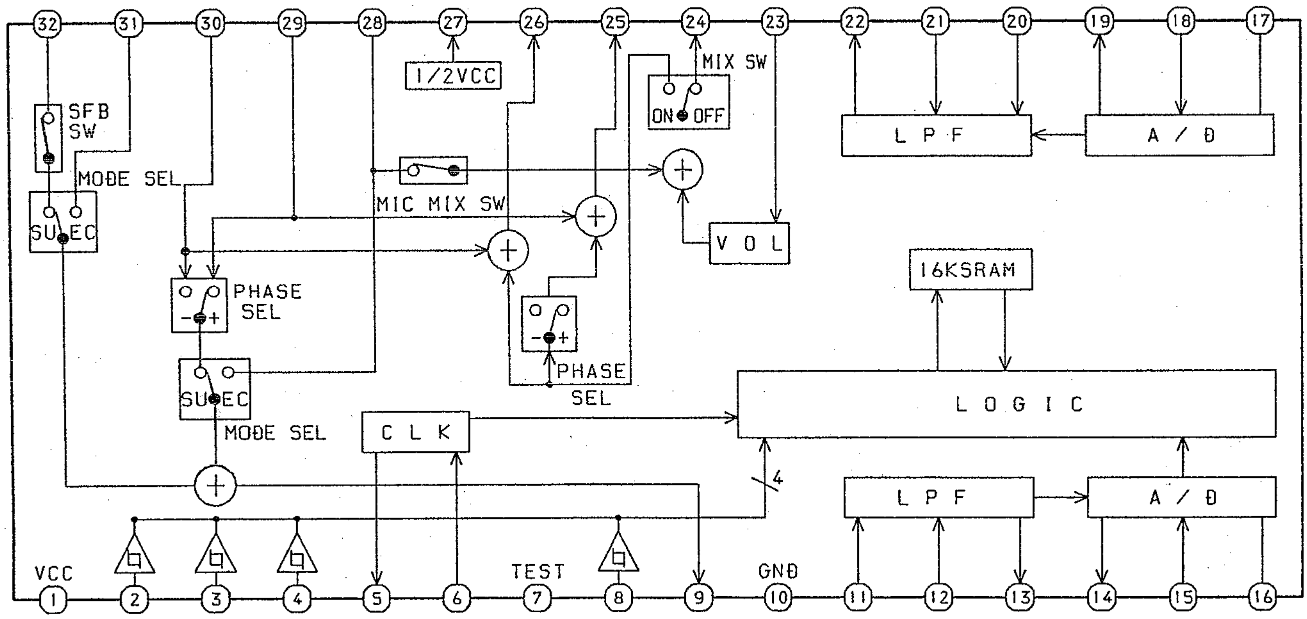
63	O-DSP CE	O	CD turntable forward direction rotation output/DSP chip enable.
64	SUR ON	O	SUR ON(output at"H").
65	O-$\overline{\text{PRESET LED}}$	O	Preset.
66~67	NC	-	Not used.
68	O-MUTE	O	System Mute ON/OFF output.
69	O-$\overline{\text{POWER}}$	O	System power supply ON/OFF output.
70	O-STB(F)	O	Front shift register,data latch strobe output.
71	O-CLK(F)	O	Front shift register,data clock output.
72	O-DATA(F)	O	Front shift register,data output.
73	VSS	-	GND.
74	O-TRAY OP	O	CD tray open output.
75	O-TRAY CL	O	CD tray close output.
76	O-VR UP	O	Vol up output.
77	O-VR DN	O	Vol down output.
78~80	NC	-	Not used.

IC BLOCK DIAGRAM

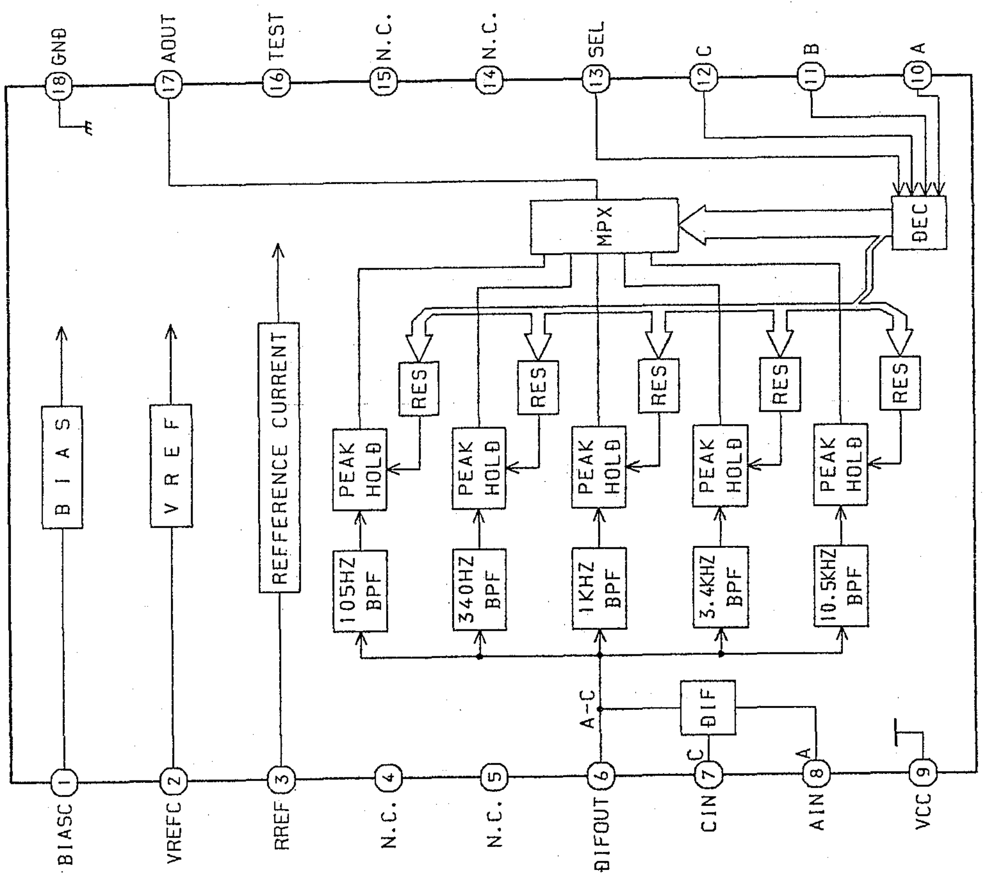
IC, BA3880S


MIXL
VCAL
Vcc
DEFL
DETL
GND
DETR
DEFR
CTL
VCAR
MIXR
OUTL
INL
APFL
HPFL
LPFL
BIASC
LPFR
HPFR
APFR
INR
OUTR
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
VCA
CTL
HPF
LPF
HI
MID
LO
CTL
VCA
HPF
LPF
HI
MID
LO

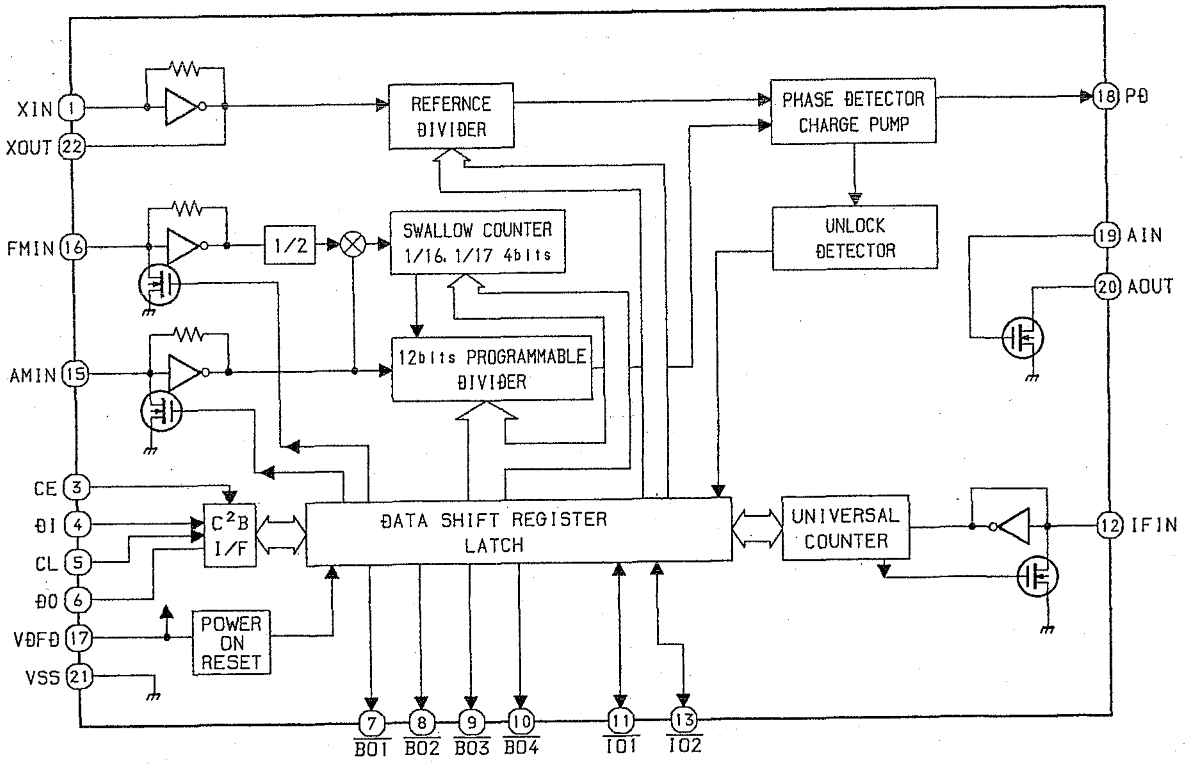
IC, M65849FP


32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
SFB SW
MODE SEL
SU EC
1/2VCC
MIX SW
ON OFF
MIC MIX SW
PHASE SEL
SU EC
MODE SEL
PHASE SEL
V O L
L P F
A / D
16KSRAM
L O G I C
C L K
4
L P F
A / D
VCC
TEST
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

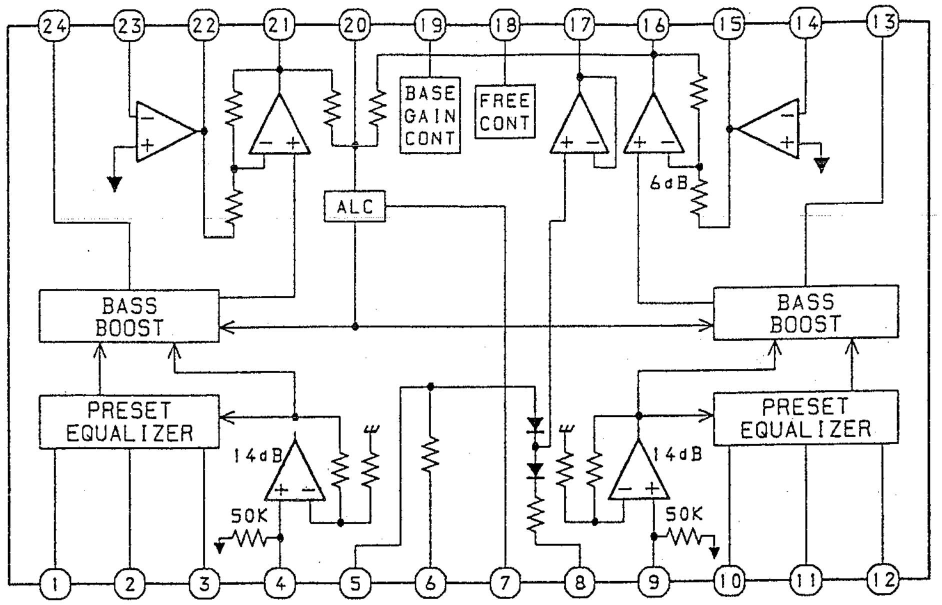
IC, BA3835S


18 GND
17 AOUT
16 TEST
15 N.C.
14 N.C.
13 SEL
12 C
11 B
10 A
MPX
DEC
RES
RES
RES
RES
RES
PEAK HOLD
PEAK HOLD
PEAK HOLD
PEAK HOLD
PEAK HOLD
105HZ BPF
340HZ BPF
1KHZ BPF
3.4KHZ BPF
10.5KHZ BPF
B I A S
V R E F
REFFERENCE CURRENT
A-C
DIF
C
A
1 BIASC
2 VREFC
3 RREF
4 N.C.
5 N.C.
6 DIFOUT
7 CIN
8 AIN
9 VCC

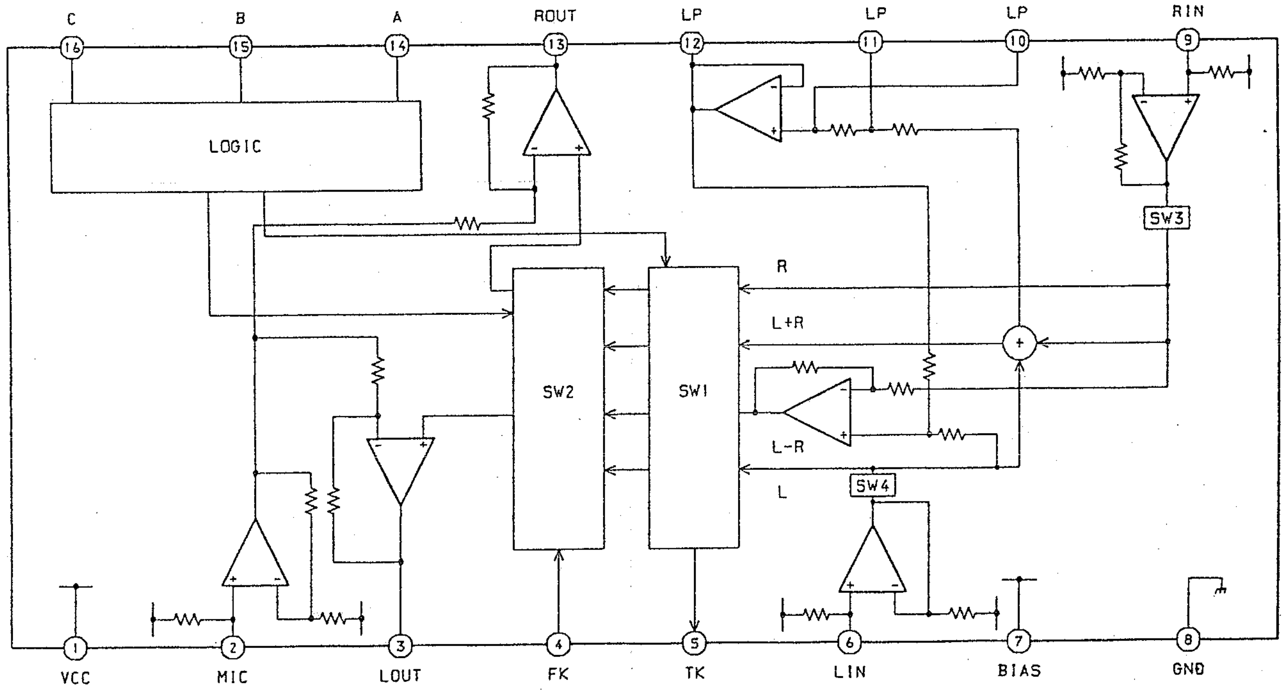
IC, LC72131D


XIN 1
XOUT 22
FMIN 16
AMIN 15
CE 3
DI 4
CL 5
DO 6
VDFD 17
VSS 21
REFERNCE DIVIDER
PHASE DETECTOR CHARGE PUMP
18 PD
UNLOCK DETECTOR
19 AIN
20 AOUT
1/2
SWALLOW COUNTER 1/16, 1/17 4bits
12bits PROGRAMMABLE DIVIDER
C²B I/F
DATA SHIFT REGISTER LATCH
UNIVERSAL COUNTER
12 IFIN
POWER ON RESET
7 BO1
8 BO2
9 BO3
10 BO4
11 IO1
13 IO2

IC, BA3842F

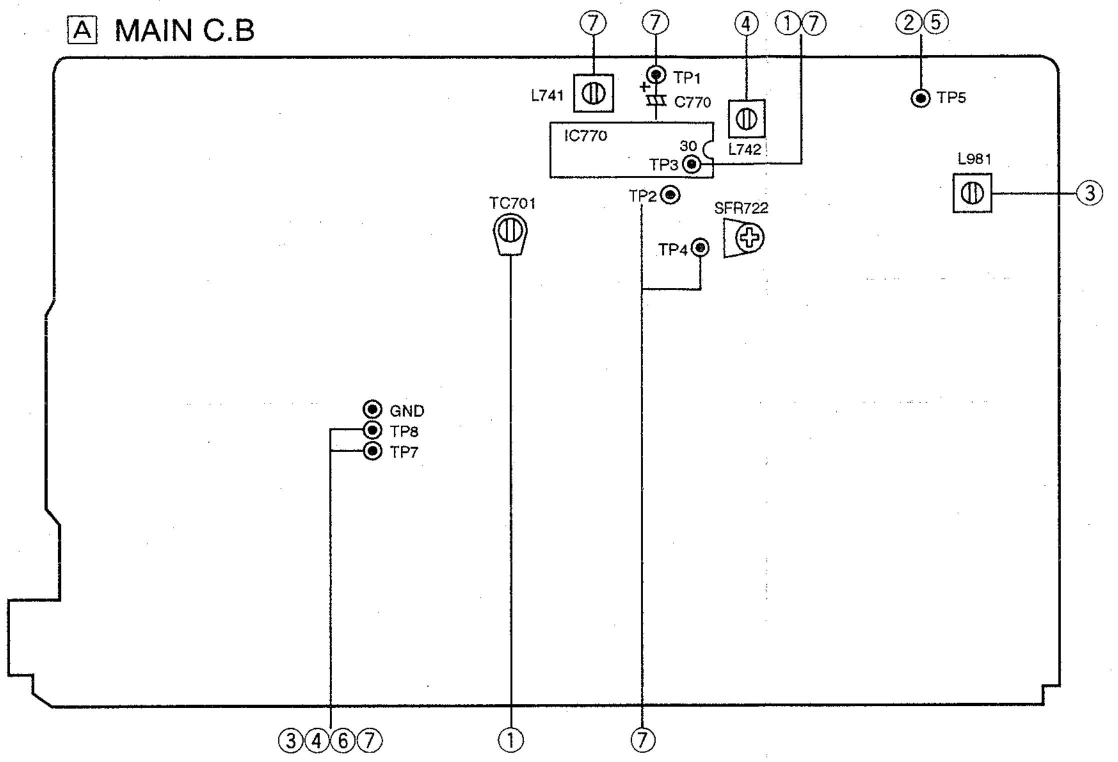

24
23
22
21
20
19
18
17
16
15
14
13
BASE GAIN CONT
FREE CONT
ALC
6dB
BASS BOOST
BASS BOOST
PRESET EQUALIZER
PRESET EQUALIZER
14dB
14dB
50K
50K
1
2
3
4
5
6
7
8
9
10
11
12

IC, BA3836


C
B
A
ROUT
LP
LP
LP
RIN
16
15
14
13
12
11
10
9
LOGIC
SW3
R
L+R
L-R
L
SW2
SW1
SW4
1
2
3
4
5
6
7
8
VCC
MIC
LOUT
FK
TK
LIN
BIAS
GND

ELECTRICAL ADJUSTMENT

A MAIN C.B


⑦
⑦
④
①⑦
②⑤
L741
TP1
C770
IC770
30
TP3
L742
TP5
L981
③
TC701
TP2
SFR722
TP4
GND
TP8
TP7
③④⑥⑦
①
⑦

< TUNER SECTION >

1. Clock Adjustment
   Settings : • Test point : TP3 (CLK)
   • Adjustment location : TC701
   Method : Set to MW(AM) 1710kHz and adjust TC701 so that the test point becomes 2160kHz ± 0.01kHz.

2. MW(AM) VT Check
   Settings : • Test point : TP5 (VT)
   Method : Set to MW(AM) 1710kHz and check that the test point is 6.3V ± 1.0V.

3. MW(AM) Tracking Adjustment
   Settings : • Test point : TP7 (Lch), TP8 (Rch)
   • Adjustment location :L981
   Method : Set to MW(AM) 1000kHz and adjust L981 that the test point becomes maximum.

4. MW(AM) IF Adjustment
   Settings : • Test point : TP7 (Lch), TP8 (Rch)
   L742 .... 450kHz

5. FM VT Check
   Settings : • Test point : TP5 (VT)
   Method : Set to FM 87.5MHz and check that the testpoint is more than 1.5V.
   Then set to FM 108MHz and check that the test point is less than 8.2V.

6. FM Tracking Check
   Settings : • Test point : TP7 (Lch), TP8 (Rch)
   Check that the test point is 3~12dB and distortion is less than 3% at FM 98.0MHz.

7. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP1, TP2 (DC balance)
   TP7, TP8 (Mono Distortion)
   • Adjustment location : L741
   • Input level : 54dB
   Method : Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
   Next, check that the distortion is less than 1.3%.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

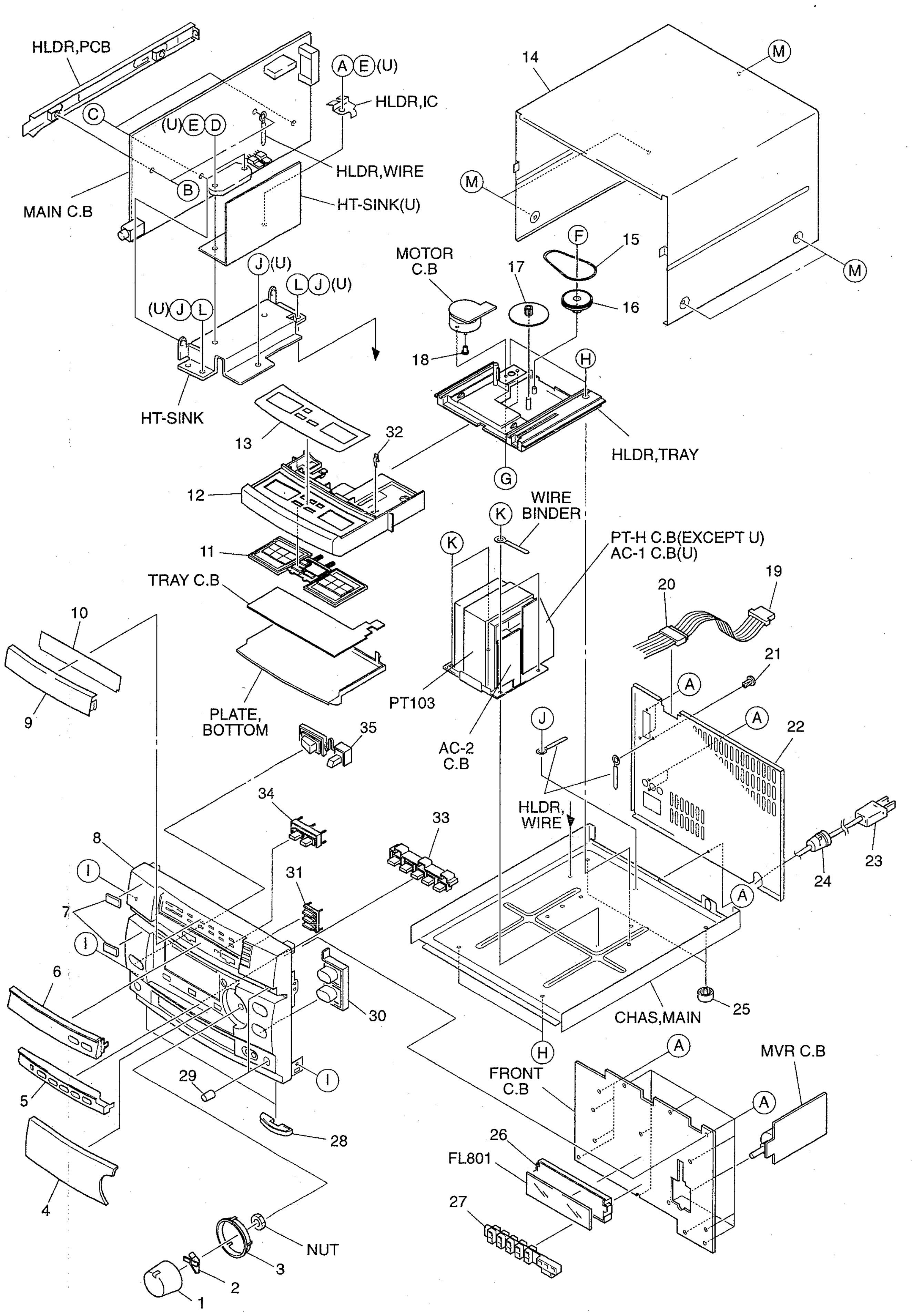
<FM SECTION>

IHF Sensitivity : (THD 3%)	Less than 10dB [at 87.5MHz] Less than 11dB [at 98.0 / 108.0MHz (HE)] Less than 8dB [at 98.0 / 108.0MHz (HR, LH, U)]
S/N 50dB Quieting sensitivity :	Less than 35dB [at 87.5 / 98.0 / 108.0MHz]
Signal to noise ratio :	More than 54dB [at 98.0MHz]
Distortion :	Less than 1.5% [at 98.0MHz]
Auto stop level :	23dB ± 10dB [at 98.0MHz]
Stereo separation :	More than 25dB [at 98.0MHz]
Intermediate frequency :	10.7MHz

<MW(AM) SECTION>

Sensitivity : (S/N 20 dB)	48 ~ 62dB [at 603kHz (HE, HR)] [at 600kHz (LH, U)] 47 ~ 59dB [at 999kHz (HE, HR)] [at 1000kHz (LH, U)] 47 ~ 59dB [at 1404kHz (HE, HR)] [at 1400kHz (LH, U)]
Signal to noise ratio :	More than 36dB [at 999kHz (HE, HR)] [at 1000kHz (LH, U)]
Distortion :	Less than 1.5% [at 999kHz (HE, HR)] [at 1000kHz (LH, U)]
Auto stop level :	50dB ± 10dB [at 999kHz (HE, HR)] [at 1000kHz (LH, U)]
Intermediate frequency :	450kHz

MECHANICAL EXPLODED VIEW 1 ／ 1


HLDR,PCB
Ⓐ Ⓔ (U)
HLDR,IC
Ⓒ
(U) Ⓔ Ⓓ
Ⓑ
HLDR,WIRE
HT-SINK(U)
MAIN C.B
Ⓙ (U)
Ⓛ Ⓙ (U)
(U) Ⓙ Ⓛ
HT-SINK
14
Ⓜ
Ⓜ
Ⓜ
Ⓕ
15
MOTOR C.B
17
16
18
Ⓗ
HLDR,TRAY
13
32
12
11
TRAY C.B
PLATE, BOTTOM
Ⓖ
Ⓚ
WIRE BINDER
Ⓚ
PT-H C.B(EXCEPT U)
AC-1 C.B(U)
PT103
AC-2 C.B
20
19
21
Ⓐ
Ⓐ
22
Ⓙ
HLDR, WIRE
10
9
35
34
33
8
Ⓘ
7
Ⓘ
31
6
30
Ⓘ
5
29
28
4
NUT
3
2
1
23
24
Ⓐ
25
CHAS,MAIN
Ⓗ
FRONT C.B
Ⓐ
MVR C.B
Ⓐ
26
FL801
27

MECHANICAL PARTS LIST 1 ／ 1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	86-NT1-021-019		KNOB,RTRY VOL
2	86-NT1-022-019		REFLECTOR,VOL
3	86-NT1-026-019		RING,VOL
4	86-NT1-028-019		WINDOW,DISPLAY
5	86-NT1-006-019		PANEL,FUN
6	86-NT1-005-019		PANEL,GEQ
7	82-NE8-032-019		BADGE AIWA 27.5
8	86-NT1-001-019		CABI,FR<EXCEPT U>
8	86-NT1-031-019		CABI,FR U<U>
9	86-NT1-027-019		WINDOW,GEQ
10	86-NT1-025-019		PLATE,GEQ
11	86-NT1-013-019		KEY,GEQ
12	86-NT1-004-019		TRAY,CONTROL
13	86-NT1-024-119		PLATE,TRAY
14	86-NT1-003-019		CABI,STEEL
15	80-VW1-217-010		BELT,SQ 1.5
16	82-NT1-205-11K		PULLEY,LOADING
17	82-NT1-204-01K		GEAR,LOADING
18	80-VW1-204-010		PULLEY,MOTOR
19	82-NT3-631-119		CORD FG 15P
20	89-VT5-202-010		BUSHING,CORD
21	87-084-077-019		NYLON RIVET DIA3.5-4.5
22	86-NT1-002-019		PANEL,REAR HEJBNM<HEJ>
22	86-NT1-042-019		PANEL,REAR HRJBNM<HRJ>
22	86-NT1-044-019		PANEL,REAR LHBNM<LH>
22	86-NT1-041-019		PANEL,REAR UBNM<U>
⚠ 23	87-050-053-019		AC CORD ASSY,U-2<U>
⚠ 23	87-050-079-019		AC-CORD ASSY,E<EXCEPT U>
24	87-085-185-019		BUSHING,AC CORD E<EXCEPT U>
24	87-085-189-019		BUSHING,CORD U<U>
25	87-085-213-019		FOOT, H12.5
26	86-NT1-203-019		GUIDE,FL
27	86-NT1-202-019		GUIDE,LED
28	85-NC1-019-019		RING,FOOT
29	86-NT1-023-019		KNOB,RTRY MIC
30	86-NT1-009-019		KEY,UP/DOWN
31	86-NT1-011-019		KEY,RDS
32	81-MT3-211-019		LEVER,OPEN
33	86-NT1-020-019		KEY,ASSY FUN
34	86-NT1-030-019		KEY,TIMER
35	86-NT1-008-019		KEY,POWER
A	87-067-703-019		BVT2+3-10 (W/O SLOT)
B	87-078-084-019		BVTT+3-6 W,CONVEX
C	87-067-633-019		BVT2+3-8 W/CONVEX
D	87-067-581-019		BVT2+3-15 W/O SLOT<EXCEPT U>
E	87-067-822-019		BVT2+3-20 W/O SLOT<U>
F	87-861-095-419		VFT2+3-8 SLOT
G	87-261-073-419		V+2.6-6
H	87-067-584-019		BVT2+3-6 W/O SLOT
I	87-591-094-419		QIT + 3 - 6 GOLD
J	87-571-092-419		VIT+3-4
K	87-078-019-019		S-SCREW,IT+4-6
L	87-067-688-019		BVTT +3-6<EXCEPT U>
M	87-067-641-019		UTT2+3-8 W/O SLOT BLK

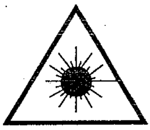
MODEL NO.

FD-NH9/NH90

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid expo-sure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainit-ulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radi-ation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

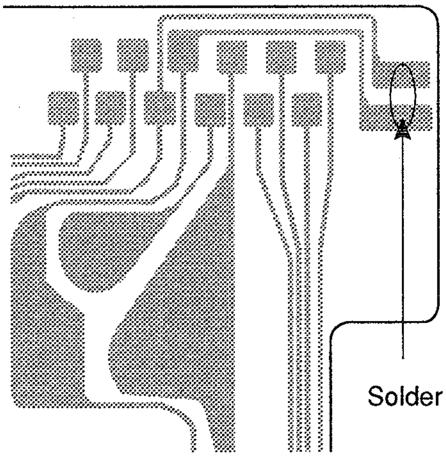
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block
(KSS-213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN 6851
	87-017-022-089		IC,NJM2068M-D(T1)
	87-017-917-089		IC,BU4066BCF
	87-001-607-089		IC,NJM4558M
	87-002-272-089		IC,TC4052 BF
	87-001-985-010		IC,HA12142NT
	87-020-784-089		IC,TC4053BF
	87-017-888-089		IC,NJM4558MD
	87-017-745-019		IC,CXA1782BQ
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-070-294-019		IC,CXD2508AQ
	86-NV1-610-010		IC,LC866424V-5A61
	87-017-375-089		IC,TC4094BF
TRANSISTOR			
	87-026-463-080		TR,2SA933S
	87-026-218-089		TR,DTC144ES
	87-026-448-089		TR,2SC1740SS
	87-026-463-089		TR,2SA933SRS
	87-026-219-089		TR,DTA144ES
	89-503-685-089		C-FET,2SK368GR
	89-113-625-089		C-TR 2SA 1362 GR(TAPG)
	87-026-210-089		C-TR,DTC144EK T147
	89-327-125-089		C-TR,2SC2712GR
	89-320-011-089		TR,2SC2001K
	89-109-521-089		TR,2SA952K
	89-318-155-089		TR,2SC1815GR
	89-333-317-889		TR,2SC3331 TU
	89-333-266-089		C-TR,2SC3326B
	87-026-233-089		C-TR,DTA114TK
	87-026-211-089		C-TR,DTA144EK T147
	89-110-373-089		C-TR,2SA1037S
	87-026-239-089		C-TR,DTC114TK
	89-113-187-089		TR,2SA1318TU
	89-421-722-389		TR,2SD2172 V/W
	87-026-223-089		C-TR,DTC143TK
	87-026-608-089		C-TR,DTC 123 JK
	87-A30-039-089		C-TR,2SD1383K
	89-112-965-089		TR,2SA1296GR
	87-026-228-089		C-TR DTA124EK
DIODE			
	87-020-465-089		DIODE,1SS133
	87-001-290-089		ZENER,HZS6B1L
	87-017-121-089		ZENER,HZS11A1
	87-020-123-089		DIODE DS446-AT (TA)
	87-001-731-089		ZENER HZS6C2L
	87-020-331-089		C-DIODE,DAN202K
	87-017-091-089		ZENER,HZS5C1
	87-020-339-089		C-DIODE,1SS226
	87-017-097-089		ZENER,HZS6B1
	87-020-330-089		C-DIODE,DAP202K
MAIN C.B			
C101	87-012-158-089		C-CAP,S 390P-50 CH
C102	87-012-158-089		C-CAP,S 390P-50 CH
C103	87-010-318-089		C-CAP,S 47P-50 CH
C104	87-010-318-089		C-CAP,S 47P-50 CH
C105	87-010-193-089		C-CAP,S 0.033-25 F
C106	87-010-193-089		C-CAP,S 0.033-25 F
C109	87-012-154-089		C-CAP,S 150P-50 CH
C110	87-012-154-089		C-CAP,S 150P-50 CH
C111	87-010-197-089		C-CAP,S 0.01-25 B
C112	87-010-197-089		C-CAP,S 0.01-25 B
C113	87-010-196-089		C-CAP,S 0.1-25 F
C151	87-012-158-089		C-CAP,S 390P-50 CH
C152	87-012-158-089		C-CAP,S 390P-50 CH
C153	87-010-322-089		C-CAP,S 100P-50 CH
C154	87-010-322-089		C-CAP,S 100P-50 CH
C155	87-010-197-089		C-CAP,S 0.01-25 B
C156	87-010-197-089		C-CAP,S 0.01-25 B
C157	87-012-156-089		C-CAP,S 220P-50 CH
C158	87-012-156-089		C-CAP,S 220P-50 CH
C159	87-010-318-089		C-CAP,S 47P-50 CH
C160	87-010-318-089		C-CAP,S 47P-50 CH
C181	87-016-492-089		C-CAP,S 0.33-16 FZ
C182	87-016-492-089		C-CAP,S 0.33-16 FZ
C183	87-010-197-089		C-CAP,S 0.01-25 B
C184	87-010-318-089		C-CAP,S 47P-50 CH
C185	87-010-197-089		C-CAP,S 0.01-25 B
C186	87-010-402-089		CAP,E 2.2-50 SME
C187	87-010-184-089		C-CAP,S 3300P-50 B
C205	87-010-426-089		C-CAP,S 0.012-25 B
C206	87-010-426-089		C-CAP,S 0.012-25 B
C303	87-010-183-089		C-CAP,S 2700P-50 B
C304	87-010-183-089		C-CAP,S 2700P-50 B
C305	87-010-404-089		CAP,E 4.7-50 SME
C306	87-010-404-089		CAP,E 4.7-50 SME
C323	87-012-157-089		C-CAP,S 330P-50 CH
C324	87-012-157-089		C-CAP,S 330P-50 CH
C341	87-010-196-089		C-CAP,S 0.1-25 F
C342	87-010-196-089		C-CAP,S 0.1-25 F
C343	87-010-196-089		C-CAP,S 0.1-25 F
C345	87-010-404-089		CAP,E 4.7-50 SME
C346	87-010-404-089		CAP,E 4.7-50 SME
C347	87-010-404-089		CAP,E 4.7-50 SME
C348	87-010-404-089		CAP,E 4.7-50 SME
C361	87-010-400-089		CAP,E 0.47-50 SME
C362	87-010-400-089		CAP,E 0.47-50 SME
C363	87-010-400-089		CAP,E 0.47-50 SME
C364	87-010-400-089		CAP,E 0.47-50 SME
C365	87-010-182-089		C-CAP,S 2200P-50 B
C366	87-010-182-089		C-CAP,S 2200P-50 B
C367	87-010-182-089		C-CAP,S 2200P-50 B
C368	87-010-182-089		C-CAP,S 2200P-50 B
C369	87-010-182-089		C-CAP,S 2200P-50 B
C370	87-010-182-089		C-CAP,S 2200P-50 B
C371	87-010-196-089		C-CAP,S 0.1-25 F
C372	87-010-196-089		C-CAP,S 0.1-25 F
C373	87-010-196-089		C-CAP,S 0.1-25 F
C374	87-010-196-089		C-CAP,S 0.1-25 F
C375	87-010-402-089		CAP,E 2.2-50 SME
C376	87-010-402-089		CAP,E 2.2-50 SME
C377	87-010-247-089		CAP,E 100-50 SME
C378	87-010-401-089		CAP,E 1-50 SME
C379	87-010-406-089		CAP,E 22-50 SME
C381	87-010-402-089		CAP,E 2.2-50 SME
C382	87-010-402-089		CAP,E 2.2-50 SME
C401	87-012-156-089		C-CAP,S 220P-50 CH
C402	87-012-156-089		C-CAP,S 220P-50 CH
C403	87-014-059-089		CAP,PP 1200P-100 J
C405	87-010-263-089		CAP,E 100-10 SME 5X11
C409	87-010-402-089		CAP,E 2.2-50 SME
C410	87-010-405-089		CAP,E 10-50 SME
C411	87-010-178-089		C-CAP,S 1000P-50 B
C412	87-010-221-089		CAP,E 470-10 11L
C414	87-010-196-089		C-CAP,S 0.1-25 F
C451	87-010-237-089		CAP,E 1000-16
C452	87-010-101-089		CAP,E 220-16 SME
C453	87-010-404-089		CAP,E 4.7-50 SME
C454	87-010-248-049		CAP,E 220-10 SME
C455	87-010-401-089		CAP,E 1-50 SME
C456	87-010-401-089		CAP,E 1-50 SME
C457	87-010-263-089		CAP,E 100-10 SME 5X11
C458	87-010-381-089		CAP,E 330-16 SME

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C459	87-010-196-089		C-CAP,S 0.1-25 F
C481	87-010-406-089		CAP,E 22-50 SME
C482	87-010-406-089		CAP,E 22-50 SME
C483	87-010-263-089		CAP,E 100-10 SME 5X11
C484	87-010-408-089		CAP,E 47-50 SME
C485	87-010-221-089		CAP,E 470-10 11L
C486	87-010-221-089		CAP,E 470-10 11L
C501	87-010-405-089		CAP,E 10-50 SME
C502	87-010-198-089		C-CAP,S 0.022-25 B
C503	87-010-196-089		C-CAP,S 0.1-25 F
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-018-209-089		CAP,TC-U 0.1-50 F
C516	87-010-381-089		CAP,E 330-16 SME
C517	87-010-404-089		CAP,E 4.7-50 SME
C518	87-010-404-089		CAP,E 4.7-50 SME
C519	87-010-405-089		CAP,E 10-50 SME
C520	87-010-405-089		CAP,E 10-50 SME
C521	87-012-154-089		C-CAP,S 150P-50 CH
C522	87-012-154-089		C-CAP,S 150P-50 CH
C523	87-010-405-089		CAP,E 10-50 SME
C524	87-010-316-089		C-CAP,S 33P-50 CH
C525	87-012-154-089		C-CAP,S 150P-50 CH
C526	87-012-154-089		C-CAP,S 150P-50 CH
C527	87-010-387-089		CAP,ELECT 470-25V
C528	87-010-384-089		CAP,E 100-25 SME
C529	87-010-374-089		CAP,E 47-10 11L
C530	87-010-316-089		C-CAP,S 33P-50 CH
C531	87-010-316-089		C-CAP,S 33P-50 CH
C533	87-012-157-089		C-CAP,S 330P-50 CH
C534	87-012-157-089		C-CAP,S 330P-50 CH
C535	87-012-154-089		C-CAP,S 150P-50 CH
C536	87-012-154-089		C-CAP,S 150P-50 CH
C601	87-010-182-089		C-CAP,S 2200P-50 B
C602	87-010-196-089		C-CAP,S 0.1-25 F
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-010-404-089		CAP,E 4.7-50 SME
C606	87-010-193-089		C-CAP,S 0.033-25 F
C607	87-010-197-089		C-CAP,S 0.01-25 B
C608	87-010-402-089		CAP,E 2.2-50 SME
C609	87-010-265-089		CAP,E 33-16 SME
C610	87-010-213-089		C-CAP,S 0.015-25 B
C611	87-010-197-089		C-CAP,S 0.01-25 B
C612	87-010-263-089		CAP,E 100-10 SME 5X11
C613	87-018-134-089		CAP,TC-U 0.01-16 Y
C614	87-010-193-089		C-CAP,S 0.033-25 F
C615	87-010-197-089		C-CAP,S 0.01-25 B
C616	87-010-193-089		C-CAP,S 0.033-25 F
C617	87-010-197-089		C-CAP,S 0.01-25 B
C618	87-010-146-089		C-CAP,S 2P-50 CH
C619	87-010-154-089		C-CAP,S 10P-50 CH
C620	87-010-263-089		CAP,E 100-10 SME 5X11
C621	87-010-178-089		C-CAP,S 1000P-50 B
C622	87-010-198-089		C-CAP,S 0.022-25 B
C623	87-010-196-089		C-CAP,S 0.1-25 F
C624	87-010-197-089		C-CAP,S 0.01-25 B
C625	87-010-263-089		CAP,E 100-10 SME 5X11
C626	87-010-248-089		CAP,E 220-10 SME
C627	87-010-197-089		C-CAP,S 0.01-25 B
C628	87-010-260-089		CAP,E 47-25 SME
C629	87-010-196-089		C-CAP,S 0.1-25 F
C640	87-010-196-089		C-CAP,S 0.1-25 F
C641	87-010-221-089		CAP,E 470-10 11L
C642	87-010-196-089		C-CAP,S 0.1-25 F
C643	87-010-197-089		C-CAP,S 0.01-25 B
C644	87-010-263-089		CAP,E 100-10 SME 5X11
C645	87-010-221-089		CAP,E 470-10 11L
C646	87-010-197-089		C-CAP,S 0.01-25 B
C647	87-010-196-089		C-CAP,S 0.1-25 F
C648	87-010-196-089		C-CAP,S 0.1-25 F
C649	87-010-193-089		C-CAP,S 0.033-25 F
C661	87-010-196-089		C-CAP,S 0.1-25 F
C662	87-010-260-089		CAP,E 47-25 SME
C681	87-010-197-089		C-CAP,S 0.01-25 B
C692	87-010-381-089		CAP,E 330-16 SME
C693	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-194-089		C-CAP,S 0.047-25 F
C702	87-010-188-089		C-CAP,S 6800P-50 B
C703	87-010-186-089		C-CAP,S 4700P-50 B
C704	87-012-156-089		C-CAP,S 220P-50 CH
C705	87-010-404-089		CAP,E 4.7-50 SME
C706	87-010-263-089		CAP,E 100-10 SME 5X11
C707	87-010-197-089		C-CAP,S 0.01-25 B
C708	87-010-400-089		CAP,E 0.47-50 SME
C709	87-010-197-089		C-CAP,S 0.01-25 B
C711	87-010-196-089		C-CAP,S 0.1-25 F
C713	87-010-263-089		CAP,E 100-10 SME 5X11
C714	87-010-197-089		C-CAP,S 0.01-25 B
C715	87-010-318-089		C-CAP,S 47P-50 CH
C716	87-010-318-089		C-CAP,S 47P-50 CH
C717	87-018-134-089		CAP,TC-U 0.01-16 Y
C741	87-012-153-089		C-CAP,S 120P-50 CH
C742	87-012-153-089		C-CAP,S 120P-50 CH
C743	87-010-321-089		C-CAP,S 82P-50 CH
C744	87-010-321-089		C-CAP,S 82P-50 CH
C745	87-010-321-089		C-CAP,S 82P-50 CH
C746	87-010-321-089		C-CAP,S 82P-50 CH
C747	87-012-153-089		C-CAP,S 120P-50 CH
C748	87-012-153-089		C-CAP,S 120P-50 CH
C749	87-012-153-089		C-CAP,S 120P-50 CH
C750	87-012-153-089		C-CAP,S 120P-50 CH
C751	87-010-401-089		CAP,E 1-50 SME
C752	87-010-401-089		CAP,E 1-50 SME
C753	87-010-186-089		C-CAP,S 4700P-50 B
C754	87-010-186-089		C-CAP,S 4700P-50 B
C755	87-010-221-089		CAP,E 470-10 11L
C756	87-010-263-089		CAP,E 100-10 SME 5X11
C771	87-018-119-089		CAP,TC-U 100P-50 B
C772	87-018-119-089		CAP,TC-U 100P-50 B
C773	87-010-318-089		C-CAP,S 47P-50 CH
C774	87-018-131-089		CAP,TC-U 1000P-50 B
C775	87-018-209-089		CAP,TC-U 0.1-50 F<YU>
C791	87-010-263-089		CAP,E 100-10 SME 5X11
C792	87-010-197-089		C-CAP,S 0.01-25 B
C901	87-018-149-089		CAP,TC-U 15P-50 CH
C902	87-012-155-089		C-CAP,S 180P-50 CH
C941	87-010-196-089		C-CAP,S 0.1-25 F
C942	87-010-196-089		C-CAP,S 0.1-25 F
C943	87-010-384-089		CAP,E 100-25 SME
C944	87-010-322-089		C-CAP,S 100P-50 CH
C945	87-010-322-089		C-CAP,S 100P-50 CH
C946	87-010-322-089		C-CAP,S 100P-50 CH
CON903	86-NV1-613-019		CONN ASSY,4P CST
CON910	87-009-065-019		CONN,15P FG
EMI803	87-008-372-089		FLTR,EMI BL01RN1
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC2	88-916-301-119		FF-CABLE,16P 1.25
FC3	88-909-251-119		FF-CABLE,9P 1.25
FC4	88-906-201-119		FF-CABLE,6P 1.25
FC5	84-ZG1-630-019		CABLE FFC 6P-1.25
FL901	86-NV1-619-019		FL,7-ST-27G
J901	81-VP1-635-019		JACK,PIN 3P EARTH
J902	81-VP1-634-019		JACK,PIN 3P
J903	81-VP1-635-019		JACK,PIN 3P EARTH
L301	86-NV1-618-019		COIL,TRAP 108K
L302	86-NV1-618-019		COIL,TRAP 108K
L303	87-003-131-089		COIL,10MH J
L304	87-003-131-089		COIL,10MH J
L305	87-003-123-089		COIL,2.2MH J

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
L306	87-003-123-089		COIL,2.2MH J
L401	86-NV1-617-019		COIL,OSC BIAS 108K
L402	87-005-447-089		COIL,180UH FLR50
L451	87-005-474-089		COIL,12UH J FLR50
L601	87-003-295-089		COIL,10UH
L901	87-A50-052-019		COIL,CLOCK 5.76MHZ T1
LED791	87-A40-123-019		LED,SLZ-8128A-01-B
LED910	87-070-108-019		LED,SLF-301C-37
LED911	87-070-108-019		LED,SLF-301C-37
SFR101	87-024-238-089		SFR,1K DIA6 V TP
SFR102	87-024-238-089		SFR,1K DIA6 V TP
SFR151	87-024-238-089		SFR,1K DIA6 V TP
SFR152	87-024-238-089		SFR,1K DIA6 V TP
SFR301	87-024-271-089		SFR4.7K DIA6 V
SFR302	87-024-271-089		SFR4.7K DIA6 V
SFR401	87-024-275-089		SFR,47K DIA6 V TP
SFR402	87-024-275-089		SFR,47K DIA6 V TP
SFR601	87-024-175-089		SFR,47K DIA6 V
SFR602	87-024-176-089		SFR,100K DIA6 V
SFR603	87-024-176-089		SFR,100K DIA6 V
SW731	87-036-109-019		SW,PUSH SPPB 61
SW732	87-036-109-019		SW,PUSH SPPB 61
VR501	86-NV1-616-019		VR,50KBX2 RK14K12A0L30
VR502	81-MX4-636-019		VR,50KBX2 RK14K12A0L30
X701	87-030-270-089		VIB,XTAL 16.9344MHZ

KEY1 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
FC6	88-909-251-119		FF-CABLE,9P 1.25
LED901	87-001-161-019		LED,SEL 2410 E GR
LED902	87-001-161-019		LED,SEL 2410 E GR
LED903	87-001-161-019		LED,SEL 2410 E GR
LED904	87-001-161-019		LED,SEL 2410 E GR
LED905	87-001-161-019		LED,SEL 2410 E GR
LED906	87-001-161-019		LED,SEL 2410 E GR
S901	87-A90-095-089		SW,TACT EVQ11G04M
S902	87-A90-095-089		SW,TACT EVQ11G04M
S903	87-A90-095-089		SW,TACT EVQ11G04M
S904	87-A90-095-089		SW,TACT EVQ11G04M
S905	87-A90-095-089		SW,TACT EVQ11G04M
S906	87-A90-095-089		SW,TACT EVQ11G04M
S907	87-A90-095-089		SW,TACT EVQ11G04M
S908	87-A90-095-089		SW,TACT EVQ11G04M
S909	87-A90-095-089		SW,TACT EVQ11G04M
S910	87-A90-095-089		SW,TACT EVQ11G04M

KEY2 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
LED907	87-002-817-019		LED,SEL 2215 S RED
LED908	87-002-817-019		LED,SEL 2215 S RED
LED909	87-002-817-019		LED,SEL 2215 S RED
S912	87-A90-095-089		SW,TACT EVQ11G04M
S913	87-A90-095-089		SW,TACT EVQ11G04M
S914	87-A90-095-089		SW,TACT EVQ11G04M
S915	87-A90-095-089		SW,TACT EVQ11G04M
S916	87-A90-095-089		SW,TACT EVQ11G04M

LED C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
LED701	87-017-806-010		LED,SEL1810DM
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-017-806-010		LED,SEL1810DM

VIDEO2 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C1	87-010-112-089		CAP,E 100-16 SME
C2	87-010-405-089		CAP,E 10-50 SME
C3	87-010-405-089		CAP,E 10-50 SME
C4	87-010-405-089		CAP,E 10-50 SME
C5	87-010-405-089		CAP,E 10-50 SME
C6	87-010-112-089		CAP,E 100-16 SME

T-T C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
FC401	84-ZG1-614-119		CABLE FFC 5P-1.25
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

DECK C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
	82-ZM1-625-019		RBN-CORD,4P-55
CON501	87-099-756-019		CONN,15P 9604S F
SFR1	87-024-581-010		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-310		SOL ASSY,27
SOL2	82-ZM1-626-010		SOL ASSY,27K
SW1	87-036-378-010		SW,PUSH 1-1-1 SH2
SW2	87-036-378-010		SW,PUSH 1-1-1 SH2
SW3	87-036-378-010		SW,PUSH 1-1-1 SH2
SW4	87-036-378-010		SW,PUSH 1-1-1 SH2
SW5	87-036-378-010		SW,PUSH 1-1-1 SH2
SW6	87-036-378-010		SW,PUSH 1-1-1 SH2
SW7	87-036-378-010		SW,PUSH 1-1-1 SH2
SW8	87-036-378-010		SW,PUSH 1-1-1 SH2
SW9	87-036-378-010		SW,PUSH 1-1-1 SH2

HEAD-1 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
W106	86-NV1-611-019		CONN ASSY,3P DECK1

HEAD-2 C.B

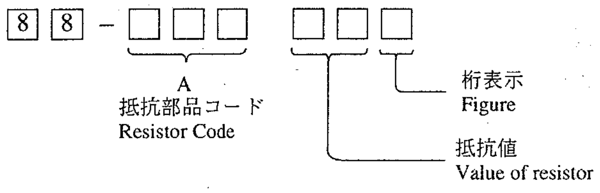
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
W105	86-NV1-612-019		CONN ASSY,8P DECK2

DRIVE C.B

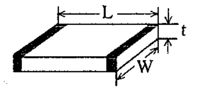
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

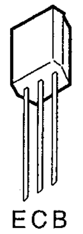
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



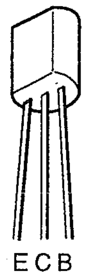
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

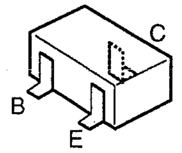
TRANSISTOR ILLUSTRATION



2SA933S
2SC1740S
DTA144ES
DTC144ES

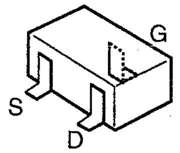


2SA952
2SA1296
2SA1318
2SC1815
2SC2001
2SC3331
2SD2172



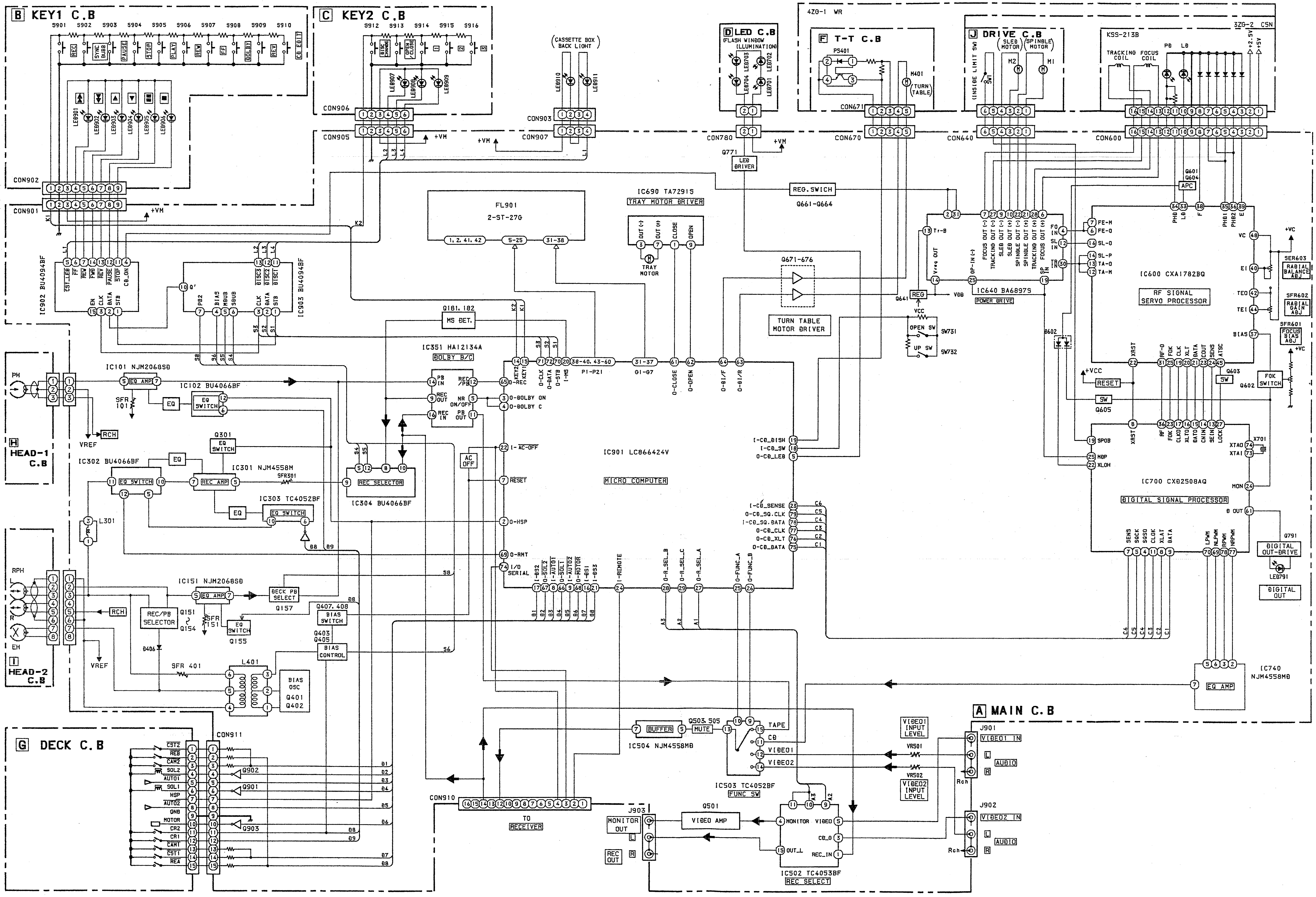
2SA1037
2SA1362
2SC2712
2SC3326
2SD1383
DTA114TK

DTA124EK
DTA144EK
DTC114TK
DTC123JK
DTC143TK
DTC144EK

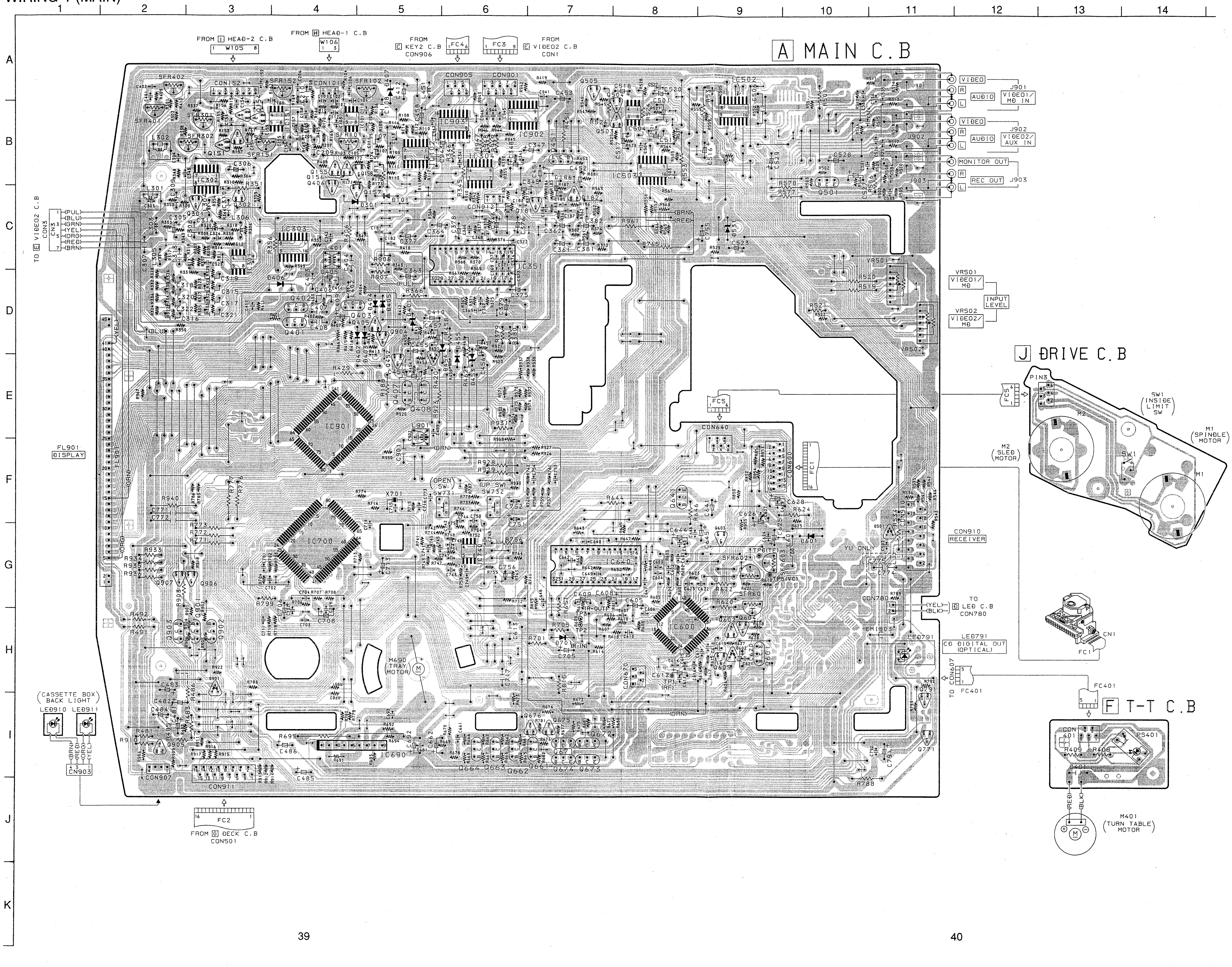


2SK368

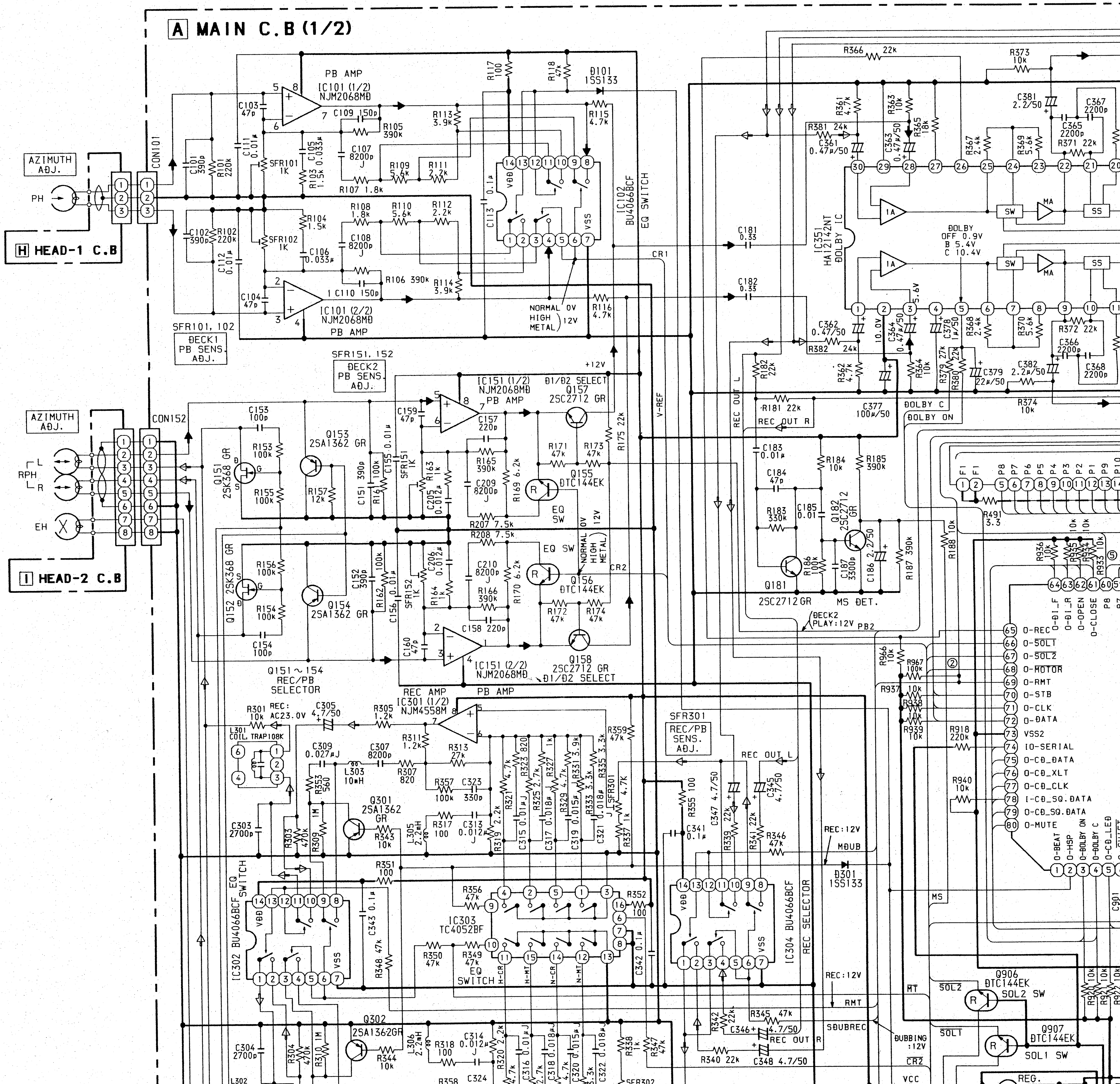
BLOCK DIAGRAM

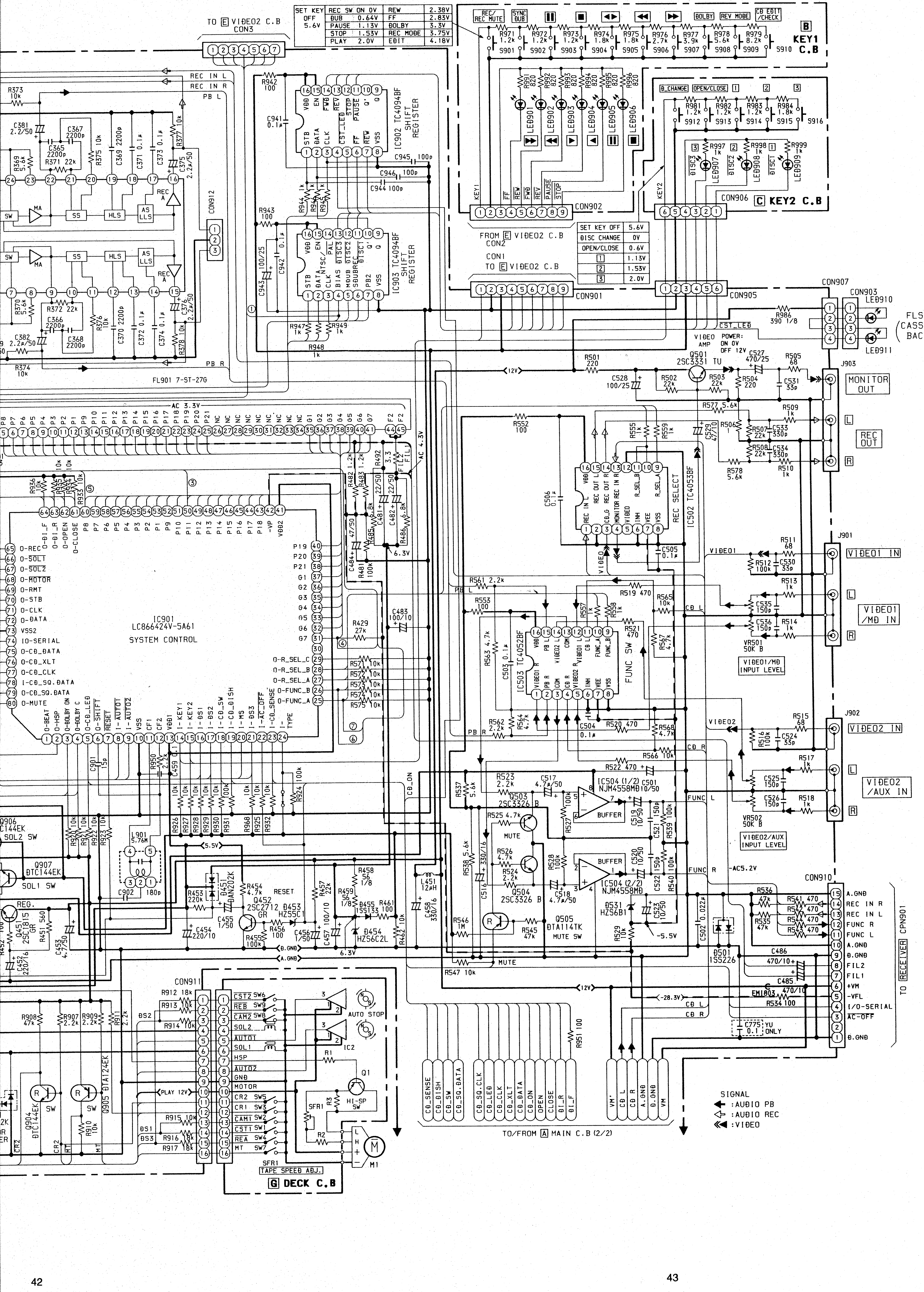

B KEY1 C.B
S901 S902 S903 S904 S905 S906 S907 S908 S909 S910
REC
SYNC DUBB
PAUSE
STOP
PLAY
REW
FF
DOLBY
REV
CD EDIT
LE8901 LE8902 LE8903 LE8904 LE8905 LE8906
CON902
CON901
+VM
IC902 BU4094BF
CST_LED FF REW FWD REV PAUSE STOP CD_ON
EN CLK DATA STB
C KEY2 C.B
S912 S913 S914 S915 S916
DISC CHANGE
OPEN /CLOSE
LE8907 LE8908 LE8909
CON906
CON905
CON907
CON903
+VM
(CASSETTE BOX BACK LIGHT)
LE8910 LE8911
IC903 BU4094BF
DISC3 DISC2 DISC1 DSCT
PB2 BIAS MDUB SDUB
CLK DATA STB
FL901
2-ST-27G
1, 2, 41, 42
5-25
31-38
IC690 TA7291S
TRAY MOTOR DRIVER
OUT(-) OUT(+) CLOSE OPEN
TRAY MOTOR
D LED C.B
(FLASH WINDOW ILLUMINATION)
LE8701 LE8702 LE8703 LE8704
CON780
Q771
LED DRIVER
+VM
REG.SWICH
Q661-Q664
Q671-676
TURN TABLE MOTOR DRIVER
4Z6-1 WR
F T-T C.B
PS401
M401
(TURN TABLE)
CON671
CON670
J DRIVE C.B
(SLED MOTOR) (SPINDLE MOTOR)
M2 M1
(INSIDE LIMIT SW) SW1
CON640
KSS-213B
TRACKING COIL
FOCUS COIL
PD LD
3Z6-2 CSN
+2.5V +5V
CON600
Q601 Q604
APC
PHD LD F
PHD1 PHD2 E
IC640 BA6897S
POWER DRIVE
FOCUS OUT(-) TRACKING OUT(-) SLED OUT(-) SLED OUT(+) SPINDLE OUT(-) SPINDLE OUT(+) TRACKING OUT(+) FOCUS OUT(+)
OP-IN(-) Vref OUT
FO IN SL IN TR IN SP IN
Tr-B
REG
Q641
VDD
VCC
OPEN SW SW731
UP SW SW732
IC600 CXA1782BQ
RF SIGNAL SERVO PROCESSOR
FE-M FE-O SL-O SL-P TA-O TA-M
VC EI TEO TEI BIAS
SER603 RADIAL BALANCE ADJ
SFR602 RADIAL GAIN ADJ
SFR601 FOCUS BIAS ADJ
+VC
XRST RF-O FOK CLK XLT DATA CCUT SENS ATSC
Q603 SW
FOK SWITCH
Q602
D602
+VCC
RESET
SW
Q605
IC700 CXD2508AQ
DIGITAL SIGNAL PROCESSOR
SPOD MDP XLOH
XTAO XTAI X701
MON
D OUT
XRST RF FOK CLKO XLTO DATO CNIN SEIN LOCK
SENS SQCK SQSO CLOK XLAT DATA
LRWM NLPWM RRPWM NRPWM
Q791
DIGITAL OUT-DRIVE
LED791
DIGITAL OUT
IC740 NJM4558MD
EQ AMP
Q181, 182
MS DET.
IC351 HA12134A
DOLBY B/C
PB IN REC /PB
REC OUT NR ON/OFF
REC IN PB OUT
IC901 LC866424V
MICRO COMPUTER
O-REC O-DOLBY ON O-DOLBY C
KEY2 KEY1
O-CLK O-DATA O-STB I-HS
38-40, 43-60 P1-P21
31-37 G1-G7
O-CLOSE O-OPEN
O-DI/F O-DI/R
I-AC-OFF
AC OFF
RESET
O-HSP
O-RNT
I/O SERIAL
I-DS2 I-SOL2 I-AUTO1 I-SOL1 I-AUTO2 I-MOTOR I-DS1 I-DS3
I-REMOTE
O-A_SEL_B O-A_SEL_C O-A_SEL_A
O-FUNC_A O-FUNC_B
I-CD_DISH I-CD_SW O-CD_LED
I-CD_SENSE O-CD_SQ.CLK I-CD_SQ.DATA O-CD_CLK O-CD_XLT O-CD_DATA
C1 C2 C3 C4 C5 C6
PH
H HEAD-1 C.B
VREF
RCH
IC101 NJM2068SD
EQ AMP
SFR 101
IC102 BU4066BF
EQ
EQ SWITCH
IC302 BU4066BF
EQ SWITCH
EQ
Q301 EQ SWITCH
IC301 NJM4558M
REC AMP
SFR301
IC303 TC4052BF
EQ SWITCH
IC304 BU4066BF
REC SELECTOR
L301
RPH
EH
I HEAD-2 C.B
IC151 NJM2068SD
EQ AMP
DECK PB SELECT
Q157
REC/PB SELECTOR
Q151 Q154
SFR 151
EQ SWITCH
Q155
Q407, 408
BIAS SWITCH
Q403 Q405
BIAS CONTROL
D406
SFR 401
L401
BIAS OSC
Q401 Q402
G DECK C.B
CON911
CST2 REB CAM2 SOL2 AUTO1 SOL1 HSP AUTO2 GND MOTOR CR2 CR1 CAM1 CST1 REA
Q902 Q901 Q903
CON910
TO RECEIVER
BUFFER
MUTE
Q503, 505
IC504 NJM4558MD
TAPE CD VIDEO1 VIDEO2
IC503 TC4052BF
FUNC SW
Q501
VIDEO AMP
J903
MONITOR OUT
REC OUT
L R
MONITOR VIDEO
CD_G
OUT_L REC_IN
IC502 TC4053BF
REC SELECT
A MAIN C.B
J901
VIDEO1 IN
AUDIO
VIDEO1 INPUT LEVEL
VR501
VR502
VIDEO2 INPUT LEVEL
Rch
J902
VIDEO2 IN

WIRING-1 (MAIN)


A MAIN C.B
FROM I HEAD-2 C.B W105
FROM H HEAD-1 C.B W106
FROM C KEY2 C.B CON906 FC4
FROM E VIDEO2 C.B CON1 FC3
TO E VIDEO2 C.B CN3
(PUL) (BLU) (GRN) (YEL) (ORG) (RED) (BRN)
FL901 DISPLAY
VIDEO AUDIO J901 VIDEO1/MD IN
VIDEO AUDIO J902 VIDEO2/AUX IN
MONITOR OUT REC OUT J903
VR501 VIDEO1/MD
VR502 VIDEO2/MD
INPUT LEVEL
J DRIVE C.B
SW1 INSIDE LIMIT SW
M1 SPINDLE MOTOR
M2 SLED MOTOR
CON910 RECEIVER
YU ONLY
TO D LED C.B CON780
LED791 CD DIGITAL OUT (OPTICAL)
TO CON607 FC401
F T-T C.B
PS401
M401 TURN TABLE MOTOR
CN1 FC1
M690 TRAY MOTOR
IC901 IC700 IC600 IC640 IC351
CASSETTE BOX BACK LIGHT LED910 LED911
CN903 CON907 CON911
FC2 FROM G DECK C.B CON501

SCHEMATIC DIAGRAM-1 (MAIN 1/2)


A MAIN C.B (1/2)
AZIMUTH ADJ.
PH
H HEAD-1 C.B
CON101
PB AMP
IC101 (1/2) NJM2068MD
IC101 (2/2) NJM2068MD
IC102 BU4066BCF EQ SWITCH
NORMAL 0V
HIGH 12V
METAL
SFR101, 102 DECK1 PB SENS. ADJ.
SFR151, 152 DECK2 PB SENS. ADJ.
AZIMUTH ADJ.
RPH L R
EH
I HEAD-2 C.B
CON152
IC151 (1/2) NJM2068MD PB AMP
IC151 (2/2) NJM2068MD
D1/D2 SELECT
Q157 2SC2712 GR
Q158 2SC2712 GR
Q155 DTC144EK
Q156 DTC144EK
EQ SW
Q151 2SK368 GR
Q152 2SK368 GR
Q153 2SA1362 GR
Q154 2SA1362 GR
Q151～154 REC/PB SELECTOR
V-REF
CR1
CR2
REC AMP
IC301 (1/2) NJM4558M
IC301 (2/2) NJM4558M REC AMP
Q301 2SA1362 GR
Q302 2SA1362GR
L301 COIL, TRAP108K
L302 COIL, TRAP 108K
IC302 BU4066BCF EQ SWITCH
IC303 TC4052BF EQ SWITCH
IC304 BU4066BCF REC SELECTOR
SFR301 REC/PB SENS. ADJ.
SFR302 REC/PB SENS. ADJ.
REC: AC23.0V
REC OUT L
REC OUT R
DUBBING :12V
REC:12V
MDUB
D301 1SS133
D407 HZ56C2L
SFR401, 402 REC/PB FREQ. RESPONSE ADJ.
BIAS OSC
L401 OSC. BIAS 108K
REC: NORMAL 4.0V HIGH 5.2V METAL 8.6V
Q401, 402 BIAS OSC
Q401 2SC2001K
Q402 2SC2001 K
Q403 2SA952K
Q403, 405, 406 BIAS CONTROL
Q405 2SC2712 GR
Q406 2SC2712 GR
D402～405 1SS133
D401 HZS11A1
D406 DS446
REC:9.75V
REC: NORMAL AC16.9V HIGH AC25.1V METAL AC36.9V
BIAS
Q408 2SA933S
RESET
Q407 DTC144ES
IC351 HA12142NT DOLBY IC
DOLBY OFF 0.9V B 5.4V C 10.4V
DOLBY C
DOLBY ON
Q181 2SC2712 GR
Q182 2SC2712 GR
MS DET.
DECK2 PLAY:12V PB2
O-REC
O-SOL1
O-SOL2
O-MOTOR
O-RMT
O-STB
O-CLK
O-DATA
VSS2
IO-SERIAL
O-CD_DATA
O-CD_XLT
O-CD_CLK
I-CD_SQ.DATA
O-CD_SQ.DATA
O-MUTE
O-D1_F
O-D1_R
O-OPEN
O-CLOSE
O-BEAT
O-HSP
O-DOLBY ON
O-DOLBY C
MS
MT
RMT
SOL2
SOL1
Q906 DTC144EK SOL2 SW
Q907 DTC144EK SOL1 SW
REG.
Q451 2SC1815 GR
VCC
DUBREC
Q901 2SA952 K SOL1 DRIVER
Q902 2SA952 K SOL2 DRIVER
D901 DAP202K
Q903 2SA1296 GR MOTOR DRIVER
Q904 DTC144EK
MOTOR
SW

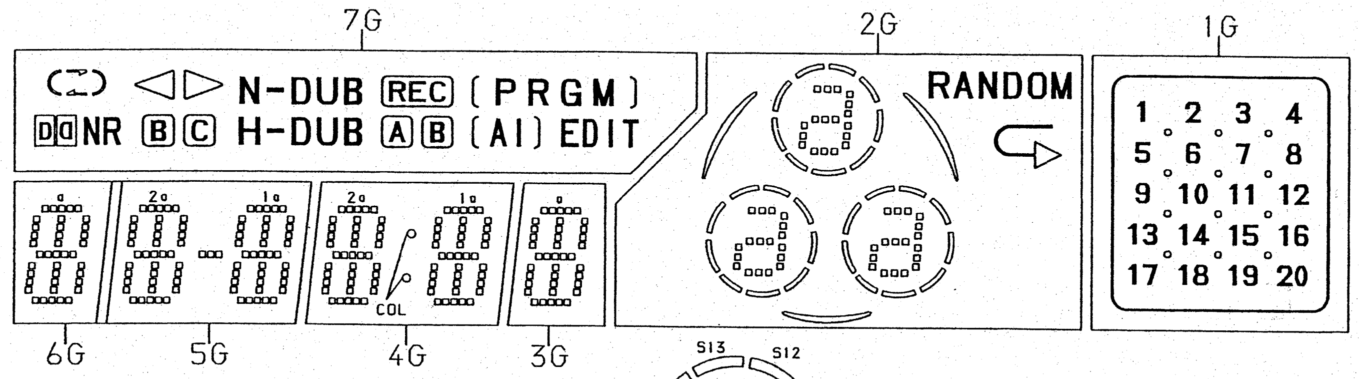

TO E VIDEO2 C.B CON3
REC IN L
REC IN R
PB L
PB R
CON912
FL901 7-ST-27G
IC902 TC4094BF SHIFT REGISTER
IC903 TC4094BF SHIFT REGISTER
B KEY1 C.B
REC/REC MUTE
SYNC DUB
DOLBY
REV MODE
CD EDIT /CHECK
S901 S902 S903 S904 S905 S906 S907 S908 S909 S910
LED901 LED902 LED903 LED904 LED905 LED906
B_CHANGE
OPEN/CLOSE
S912 S913 S914 S915 S916
LED907 LED908 LED909
CON902
CON906
C KEY2 C.B
FROM E VIDEO2 C.B CON2
CON1 TO E VIDEO2 C.B
CON901
CON905
CON907
CON903
LED910
LED911
FLS301C-37 (CASSETTE BOX BACK LIGHT)
CST_LED
VIDEO AMP POWER: ON 0V OFF 12V
Q501 2SC3331 TU
J903
MONITOR OUT
REC OUT
L
R
IC502 TC4053BF REC SELECT
J901
VIDEO1 IN
VIDEO1 /MD IN
VR501 50K B
VIDEO1/MD INPUT LEVEL
IC503 TC4052BF FUNC SW
J902
VIDEO2 IN
VIDEO2 /AUX IN
VR502 50K B
VIDEO2/AUX INPUT LEVEL
IC504 (1/2) NJM4558MD
IC504 (2/2) NJM4558MD
BUFFER
Q503 2SC3326 B
Q504 2SC3326 B
MUTE
Q505 DTA114TK MUTE SW
D531 HZ56B1
D501 1SS226
EM1803
YU ONLY
CON910
A.GND
REC IN R
REC IN L
FUNC R
FUNC L
D.GND
FIL2
FIL1
+VM
-VFL
I/O-SERIAL
AC-OFF
TO RECEIVER CPN901
IC901 LC866424V-5A61 SYSTEM CONTROL
AC 3.3V
RESET
Q452 2SC2712 GR
D451 DAN202K
D453 HZ55C1
D454 HZ56C2L
D455 1SS133
L451 12μH
L901 5.76M
Q906 DTC144EK SOL2 SW
Q907 DTC144EK SOL1 SW
Q451 2SC1815 GR
REG.
Q904 DTC144EK SW
Q905 DTA124EK SW
CON911
AUTO STOP
IC2
Q1
HI-SP SW
SFR1 TAPE SPEED ADJ.
M1
G DECK C.B
PLAY 12V
MUTE
12V
-28.3V
CD L
CD R
-5.5V
-AC5.2V
6.3V
5.5V
TO/FROM A MAIN C.B (2/2)
SIGNAL
← :AUDIO PB
⇦ :AUDIO REC
⇇ :VIDEO

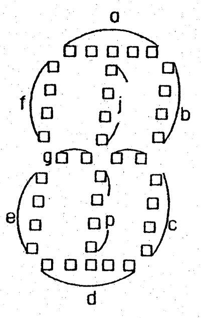
SET KEY OFF 5.6V	REC SW ON	0V	REW	2.38V
	DUB	0.64V	FF	2.83V
	PAUSE	1.13V	DOLBY	3.3V
	STOP	1.53V	REC MODE	3.75V
	PLAY	2.0V	EDIT	4.18V

SET KEY OFF	5.6V
DISC CHANGE	0V
OPEN/CLOSE	0.6V
1	1.13V
2	1.53V
3	2.0V

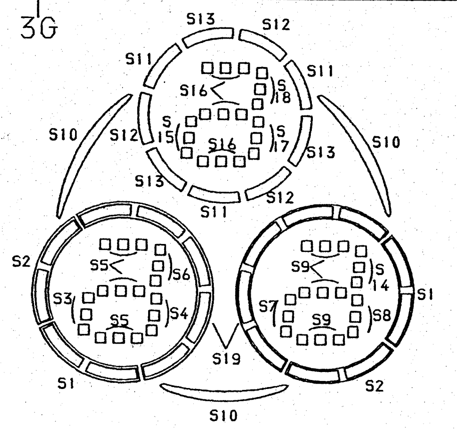
FL (7-ST-27G) GRID ASSIGNMENT ∕ ANODE CONNECTION

GRID ASSIGNMENT

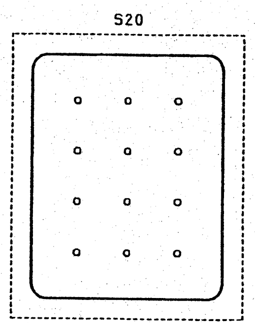

7G
2G
1G
N-DUB
REC
PRGM
NR
B C
H-DUB
A B
AI
EDIT
RANDOM
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
17 18 19 20
COL
6G
5G
4G
3G



(6G ~ 3G)


S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19

(2G)

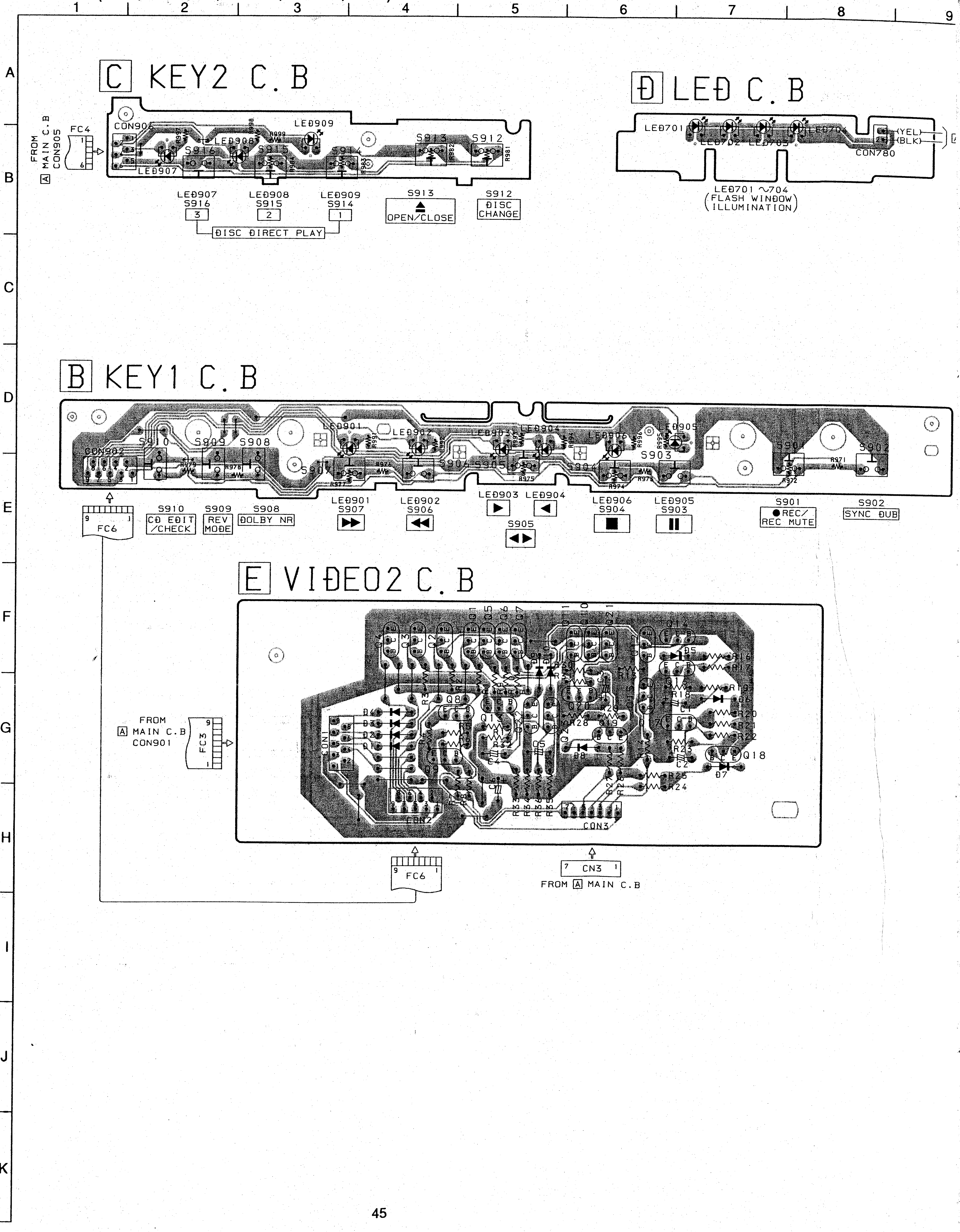


(1G)

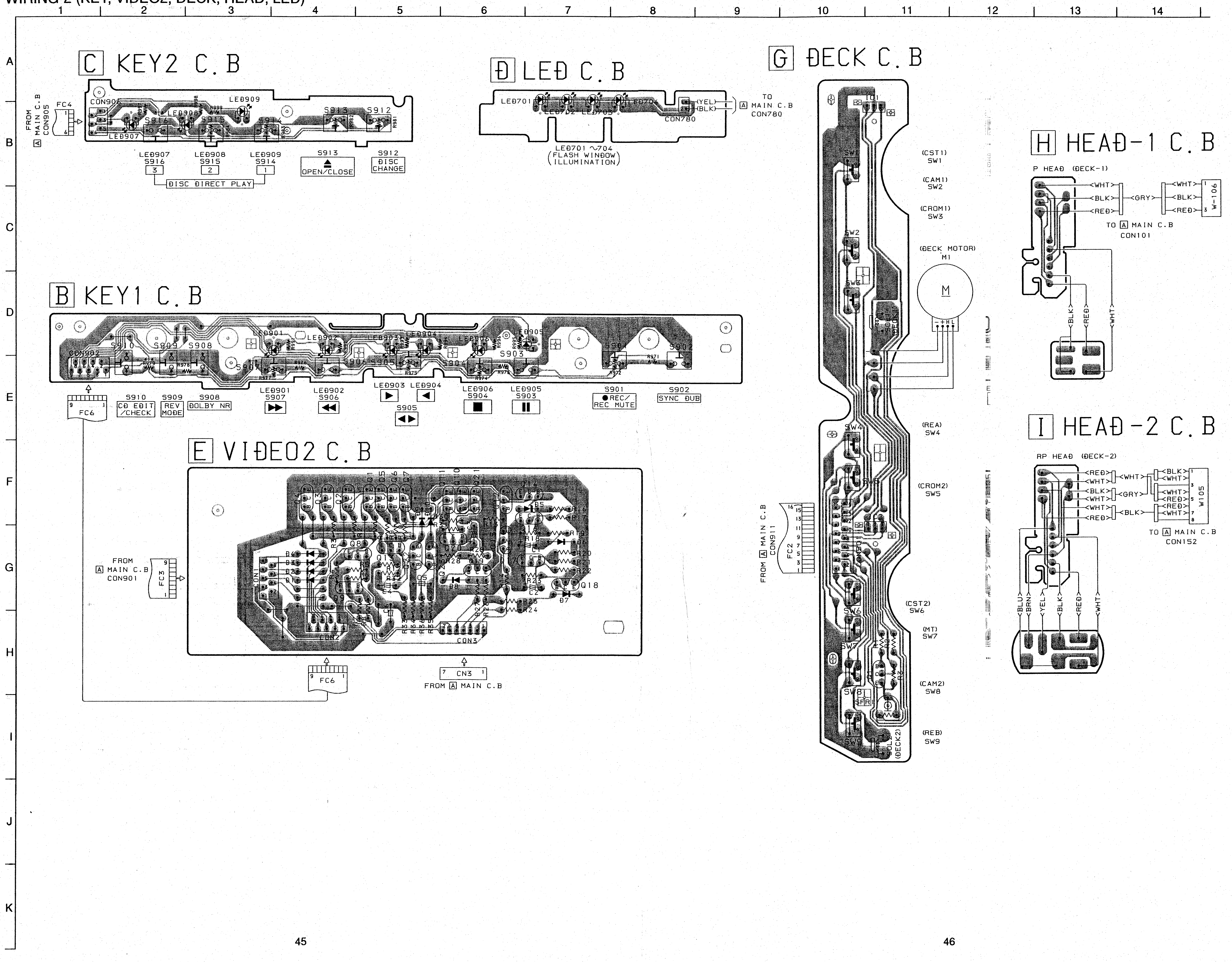
ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	**DD NR**	d	1d	1d	d	S1	**20**
P2	(	p	1p	1p	p	S2	**19**
P3	⇄	e	1e	1e	e	S3	**18**
P4	)	c	1c	1c	c	S4	**17**
P5	**B** (LEFT)	g	1g	1g	g	S5	**16**
P6	**C**	f	1f	1f	f	S6	**15**
P7	◁	b	1b	1b	b	S7	**14**
P8	▷	j	1j	1j	j	S8	**13**
P9	**N-DUB**	a	1a	1a	a	S9	**12**
P10	**H-DUB**	—	2d	2d	—	S10	**11**
P11	**REC**	—	2p	2p	—	S11	**10**
P12	**A**	—	2e	2e	—	S12	**9**
P13	**B** (RIGHT)	—	2c	2c	—	S13	**8**
P14	**PRGM**	—	2g	2g	—	S14	**7**
P15	**AI**	—	2f	2f	—	S15	**6**
P16	**EDIT**	—	2b	2b	—	S16	**5**
P17	**(PRGM)**	—	2j	2j	—	S17	**4**
P18	**(AI)**	—	2a	2a	—	S18	**3**
P19	—	—	▫▫▫	COL (HIGH)	—	S19	**2**
P20	—	—	—	COL (LOW)	—	↪	**1**
P21	—	—	—	—	—	**RANDOM**	S20

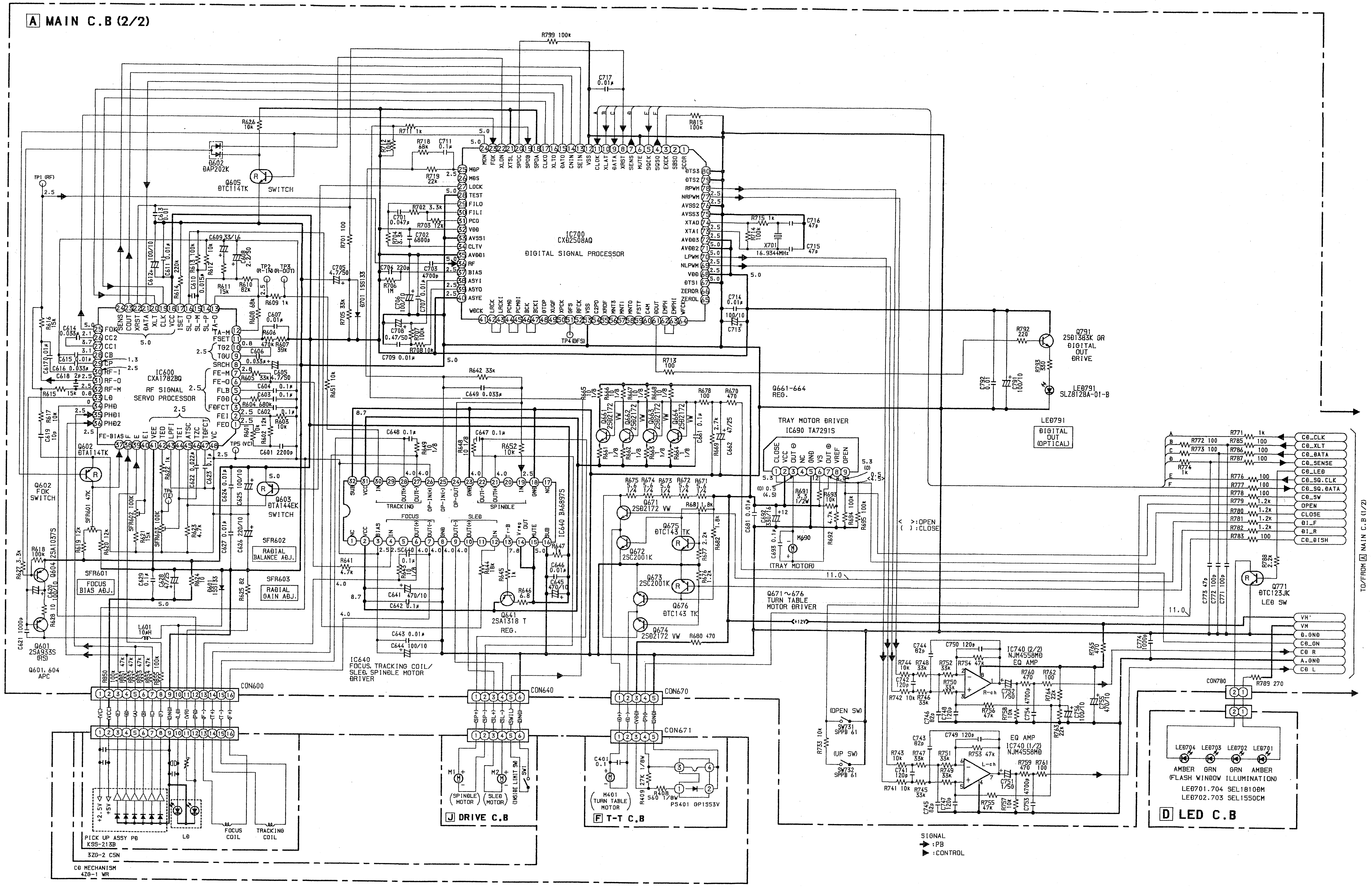
WIRING-2 (KEY, VIDEO2, DECK, HEAD, LED)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
K
C KEY2 C.B
FROM A MAIN C.B CON905
FC4
CON901
LED909
LED908
LED907
S916
S915
S914
S913
S912
3
2
1
OPEN/CLOSE
DISC CHANGE
DISC DIRECT PLAY
D LED C.B
LED701
LED702
LED703
LED704
CON780
YEL
BLK
LED701 ~704
(FLASH WINDOW ILLUMINATION)
B KEY1 C.B
CON902
LED901
LED902
LED903
LED904
LED905
LED906
S901
S902
S903
S904
S905
S906
S907
S908
S909
S910
FC6
S910
CD EDIT /CHECK
S909
REV MODE
S908
DOLBY NR
LED901 S907
LED902 S906
LED903 LED904
S905
LED906 S904
LED905 S903
S901
●REC/ REC MUTE
S902
SYNC DUB
E VIDEO2 C.B
FROM A MAIN C.B CON901
FC3
CON1
CON2
CON3
FC6
CN3
FROM A MAIN C.B
Q18
D7

WIRING-2 (KEY, VIDEO2, DECK, HEAD, LED)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
C KEY2 C.B
FROM A MAIN C.B CON905
FC4
CON904
LED909
LED908
LED907
S916
S915
S914
S913
S912
LED907 S916 3
LED908 S915 2
LED909 S914 1
DISC DIRECT PLAY
S913 ▲ OPEN/CLOSE
S912 DISC CHANGE
D LED C.B
LED701
LED702
LED703
LED704
CON780
(YEL)
(BLK)
TO A MAIN C.B CON780
LED701 ~704 (FLASH WINDOW ILLUMINATION)
G DECK C.B
SW1 (CST1)
SW2 (CAM1)
SW3 (CROM1)
(DECK MOTOR) M1
M
SW4 (REA)
SW5 (CROM2)
SW6 (CST2)
SW7 (MT)
SW8 (CAM2)
SW9 (REB)
SOL1 (DECK1)
SOL2 (DECK2)
FROM A MAIN C.B CON911
FC2
H HEAD-1 C.B
P HEAD (DECK-1)
<WHT>
<BLK>
<RED>
<GRY>
W-106
TO A MAIN C.B CON101
B KEY1 C.B
CON902
S910
S909
S908
S907
S906
S905
S904
S903
S902
S901
LED901
LED902
LED903
LED904
LED905
LED906
FC6
S910 CD EDIT /CHECK
S909 REV MODE
S908 DOLBY NR
LED901 S907 ▶▶
LED902 S906 ◀◀
LED903 ▶ LED904 ◀
S905 ◀▶
LED906 S904 ■
LED905 S903 ❚❚
S901 ●REC/ REC MUTE
S902 SYNC DUB
E VIDEO2 C.B
FROM A MAIN C.B CON901
FC3
CON1
CON2
CON3
FC6
CN3
FROM A MAIN C.B
I HEAD-2 C.B
RP HEAD (DECK-2)
<RED>
<WHT>
<BLK>
<GRY>
W105
TO A MAIN C.B CON152
<BLU>
<BRN>
<YEL>

SCHEMATIC DIAGRAM-2 (MAIN 2/2)


A MAIN C.B (2/2)
IC700
CXD2508AQ
DIGITAL SIGNAL PROCESSOR
IC600
CXA1782BQ
RF SIGNAL
SERVO PROCESSOR
Q602
DAP202K
Q605
DTC114TK
SWITCH
TP1 (RF)
Q602
DTA114TK
Q602
FOK
SWITCH
Q603
DTA144EK
SWITCH
SFR601
FOCUS
BIAS ADJ.
SFR602
RADIAL
BALANCE ADJ.
SFR603
RADIAL
GAIN ADJ.
Q601
2SA933S
(RS)
Q601, 604
APC
Q604 2SA1037S
L601
10μH
CON600
IC640 BA6897S
IC640
FOCUS, TRACKING COIL/
SLED, SPINDLE MOTOR
DRIVER
TRACKING
FOCUS
SPINDLE
SLED
Q641
2SA1318 T
REG.
CON640
Q661~664
REG.
TRAY MOTOR DRIVER
IC690 TA7291S
M690
(TRAY MOTOR)
< >:OPEN
( ):CLOSE
Q671~676
TURN TABLE
MOTOR DRIVER
Q671
2SD2172 VW
Q672
2SC2001K
Q673
2SC2001K
Q674
2SD2172 VW
Q675
DTC143 TK
Q676
DTC143 TK
CON670
Q791
2SD1383K QR
DIGITAL
OUT
DRIVE
LED791
SLZ8128A-01-B
LED791
DIGITAL
OUT
(OPTICAL)
X701
16.9344MHz
IC740 (2/2)
NJM4558MD
EQ AMP
IC740 (1/2)
NJM4558MD
EQ AMP
R-ch
L-ch
Q771
DTC123JK
LED SW
CD_CLK
CD_XLT
CD_DATA
CD_SENSE
CD_LED
CD_SQ.CLK
CD_SQ.DATA
CD_SW
OPEN
CLOSE
DI_F
DI_R
CD_DISH
VH
VN
D.GND
CD_ON
CD R
A.GND
CD L
TO/FROM A MAIN C.B (1/2)
CON780
(OPEN SW)
SW731
SPPB 61
(UP SW)
SW732
SPPB 61
CON671
M401
TURN TABLE
MOTOR
PS401 GP1S53V
F T-T C.B
M1
(SPINDLE
MOTOR)
M2
(SLED
MOTOR)
INSIDE LIMIT SW
SW1
J DRIVE C.B
PICK UP ASSY PB
KSS-213B
LD
FOCUS
COIL
TRACKING
COIL
3ZG-2 CSN
CD MECHANISM
4ZG-1 WR
LED704 LED703 LED702 LED701
AMBER GRN GRN AMBER
(FLASH WINDOW ILLUMINATION)
LED701.704 SEL1810DM
LED702.703 SEL1550CM
D LED C.B
SIGNAL
:PB
:CONTROL

IC DESCRIPTION

IC, LC866424V-5A61

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>O-BEAT</td><td>O</td><td>REC beat output. (ON/$\overline{\text{OFF}}$)</td></tr>
<tr><td>2</td><td>O-HSP</td><td>O</td><td>High speed dubbing switch. (HIGH/$\overline{\text{NORMAL}}$)</td></tr>
<tr><td>3</td><td>O-DOLBY/ON</td><td>O</td><td>DOLBY IC switch output. (DOLBY ON/$\overline{\text{OFF}}$)</td></tr>
<tr><td>4</td><td>O-DOLBY/C</td><td>O</td><td>DOLBY IC mode switch output. (DOLBY $\overline{\text{B}}$/C)</td></tr>
<tr><td>5</td><td>O-CD/LED</td><td>O</td><td>Flash window output. (ON/$\overline{\text{OFF}}$)</td></tr>
<tr><td>6</td><td>O-$\overline{\text{SHIFT}}$</td><td>O</td><td>Microprocessor clock shift out during tuner reception.</td></tr>
<tr><td>7</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>Reset input (Reset at "L").</td></tr>
<tr><td>8</td><td>I-$\overline{\text{AUTO 1}}$</td><td>I</td><td>Deck 1 auto stop input.</td></tr>
<tr><td>9</td><td>I-$\overline{\text{AUTO 2}}$</td><td>I</td><td>Deck 2 auto stop input.</td></tr>
<tr><td>10</td><td>VSS 1</td><td>-</td><td>GND.</td></tr>
<tr><td>11</td><td>CF 1</td><td>I</td><td>5.76 MHz oscillator.</td></tr>
<tr><td>12</td><td>CF 2</td><td>O</td><td>5.76 MHz oscillator.</td></tr>
<tr><td>13</td><td>VDD 1</td><td>-</td><td>Power supply input.</td></tr>
<tr><td>14</td><td>I-KEY 1</td><td>I</td><td>Key 1 A/D input.</td></tr>
<tr><td>15</td><td>I-KEY 2</td><td>I</td><td>Key 2 A/D input.</td></tr>
<tr><td>16</td><td>I-DS 1</td><td>I</td><td>Deck 1 mechanism switch input.</td></tr>
<tr><td>17</td><td>I-DS 2</td><td>I</td><td>Deck 2 mechanism switch input.</td></tr>
<tr><td>18</td><td>I-CD/$\overline{\text{SW}}$</td><td>I</td><td>CD mechanism switch A/D input.</td></tr>
<tr><td>19</td><td>I-CD/DISH</td><td>I</td><td>CD turntable photo sensor A/D input.</td></tr>
<tr><td>20</td><td>I-MS</td><td>I</td><td>Deck MS detection A/D input.</td></tr>
<tr><td>21</td><td>I-DS 3</td><td>I</td><td>Deck mechanism switch input (REC enable A/D input).</td></tr>
<tr><td>22</td><td>I-$\overline{\text{AC/OFF}}$</td><td>I</td><td>HOLD input.</td></tr>
<tr><td>23</td><td>I-CD/SENSE</td><td>I</td><td>CD microprocessor control SENSE input.</td></tr>
<tr><td>24</td><td>I-TYPE</td><td>I</td><td>TYPE select A/D input. (H : DOLBY C / L : DOLBY B)</td></tr>
<tr><td>25~26</td><td>O-FUNC/A~B</td><td>O</td><td>FUNCTION switch output.
<table>
<tr><th></th><th>AUX1</th><th>AUX2</th><th>TAPE</th><th>CD</th></tr>
<tr><td>A</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td>B</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
</table></td></tr>
<tr><td>27</td><td>O-R-SEL/A</td><td>O</td><td>Video signal switch. (VIDEO $\overline{\text{1}}$/2)</td></tr>
<tr><td>28</td><td>O-R-SEL/B</td><td>O</td><td>REC output switch. (ON/$\overline{\text{MUTE}}$)</td></tr>
<tr><td>29</td><td>O-R-SEL/C</td><td>O</td><td>Monitor output switch. ($\overline{\text{VIDEO}}$/CDG)</td></tr>
<tr><td>30</td><td>-</td><td>-</td><td>Not used.</td></tr>
<tr><td>31~37</td><td>G7~G1</td><td>O</td><td>FL grid output (G7~G1).</td></tr>
<tr><td>38~40</td><td>P21~P19</td><td>O</td><td>FL segment output P21~P19.</td></tr>
<tr><td>41</td><td>VDD2</td><td>-</td><td>Power supply input.</td></tr>
<tr><td>42</td><td>-VP</td><td>-</td><td>Power supply for FL display .</td></tr>
<tr><td>43~60</td><td>P18~P8</td><td>O</td><td>FL segment output P18~P8.</td></tr>
<tr><td>61</td><td>O-CLOSE</td><td>O</td><td>CD tray close data output.</td></tr>
<tr><td>62</td><td>O-OPEN</td><td>O</td><td>CD tray open data output.</td></tr>
<tr><td>63</td><td>O-DI/R</td><td>O</td><td>CD turntable reverse rotation output.</td></tr>
<tr><td>64</td><td>O-DI/F</td><td>O</td><td>CD turntable forward rotation output.</td></tr>
<tr><td>65</td><td>O-REC</td><td>O</td><td>Deck REC switch output.</td></tr>
<tr><td>66</td><td>O-$\overline{\text{SOL1}}$</td><td>O</td><td>Deck 1 plunger $\overline{\text{ON}}$/OFF output.</td></tr>
<tr><td>67</td><td>O-$\overline{\text{SOL2}}$</td><td>O</td><td>Deck 2 plunger $\overline{\text{ON}}$/OFF output.</td></tr>
<tr><td>68</td><td>O-$\overline{\text{MOTOR}}$</td><td>O</td><td>Deck motor $\overline{\text{ON}}$/OFF output.</td></tr>
<tr><td>69</td><td>O-RMT</td><td>O</td><td>REC mute $\overline{\text{ON}}$/OFF output.</td></tr>
<tr><td>70</td><td>O-STB</td><td>O</td><td>Front shift register, data latch strobe output.</td></tr>
<tr><td>71</td><td>O-CLK</td><td>O</td><td>Front shift register, data transfer clock output.</td></tr>
<tr><td>72</td><td>O-DATA</td><td>O</td><td>Front shift register, data output.</td></tr>
<tr><td>73</td><td>VSS2</td><td>-</td><td>GND.</td></tr>
<tr><td>74</td><td>I/O/SERIAL</td><td>I/O</td><td>Command input / output with the CD microprocessor.</td></tr>
<tr><td>75</td><td>O-CD/DATA</td><td>O</td><td>CD microprocessor control data output.</td></tr>
<tr><td>76</td><td>O-CD/XLT</td><td>O</td><td>CD microprocessor control latch output.</td></tr>
<tr><td>77</td><td>O-CD/CLK</td><td>O</td><td>CD microprocessor control clock output.</td></tr>
<tr><td>78</td><td>I-CD/SQ,DATA</td><td>I</td><td>CD SUB-Q data input.</td></tr>
<tr><td>79</td><td>O-CD/SQ,DATA</td><td>O</td><td>CD SUB-Q clock output.</td></tr>
<tr><td>80</td><td>O-MUTE</td><td>O</td><td>System mute ON/$\overline{\text{OFF}}$ output.</td></tr>
</table>

IC, CXD2508AQ

Pin No.	Pin Name	I/O	Description
1	SCOR	O	1H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUBP ~ W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel. (Connected to GND)
7	SENS	O	SENS signal output to MAIN CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from MAIN CPU.
10	XLAT	I	Latch input from MAIN CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from MAIN CPU to transfer serial data.
12	VSS	-	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18	TEST2	I	TEST. (Connected to +5V)
19~21	SPOB~D	I	Input from INSIDE LIMIT switch (SW1).
22	XLON	O	Mute control output.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
18	TEST1	I	TEST. (Connected to GND)
19	FILO	O	Filter output to master PLL. (Slave = digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	-	Power supply input. (+5V)
33	AVSS1	-	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	-	Power supply input. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparator voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L = VSS, H = VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON. (Connected to +5V)
41	WCDK	O	D/A interface, word clock (2Fs) for 48-bit slot.

Pin No.	Pin Name	I/O	Description
42	LRCK	O	D/A interface, LR clock (FS) for 48-bit slot.
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCK1	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUGF output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	-	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the play back disk has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF.
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	Not sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	Not sound data detection output. H (L-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC. (Connected to GND)
68	VDD	-	Power supply input. (+5V)
69	NLPWM	O	L-ch PWM output. (Reversed polarity)
70	LPWM	O	L-ch PWM output. (Normal polarity)
71	AVDD2	-	Power supply input to L-ch PWM driver. (Connected to +5V)
72	AVDD3	-	Power supply input to X'tal. (Connected to +5V)
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS1	-	Power supply input to X'tal. (Connected to GND)
76	AVSS2	-	Power supply input to PWM driver. (Connected to GND)
77	NRPWM	O	R-ch PWM output. (Reversed phase)
78	RPWM	O	R-ch PWM output. (Normal phase)
79	DTS2	I	TEST-2 for DAC. (Connected to GND)
80	DTS3	I	TEST-3 for DAC. (Connected to GND)

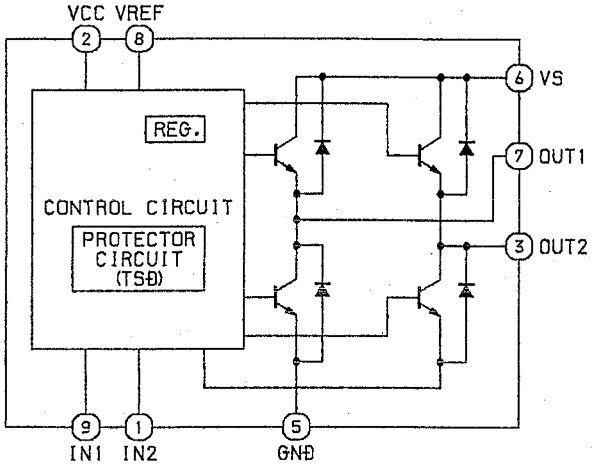
IC, CXA1782BQ

Pin No.	Pin Name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	Corrects the focus servo high frequency gain.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drove output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	-	+5V power supply pin.
19	CLK	I	Serial data transfer clock input from DSP.
20	XLT	I	Latch input from DSP.
21	DATA	I	Serial data input from DSP.
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command to DSP.
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (TP1)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin Name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35~36	PHD1~2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	BIAS	I	Bias adjustment pin of the non-inverted side of the focus error amplifier.
38~39	F~E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	-	Gain adjustment pin of the I-V amplifier E.
41	VEE	-	GND connection pin.
42	TEO	O	Tracking error amplifier output pin.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC BLOCK DIAGRAM

IC, TA7291S



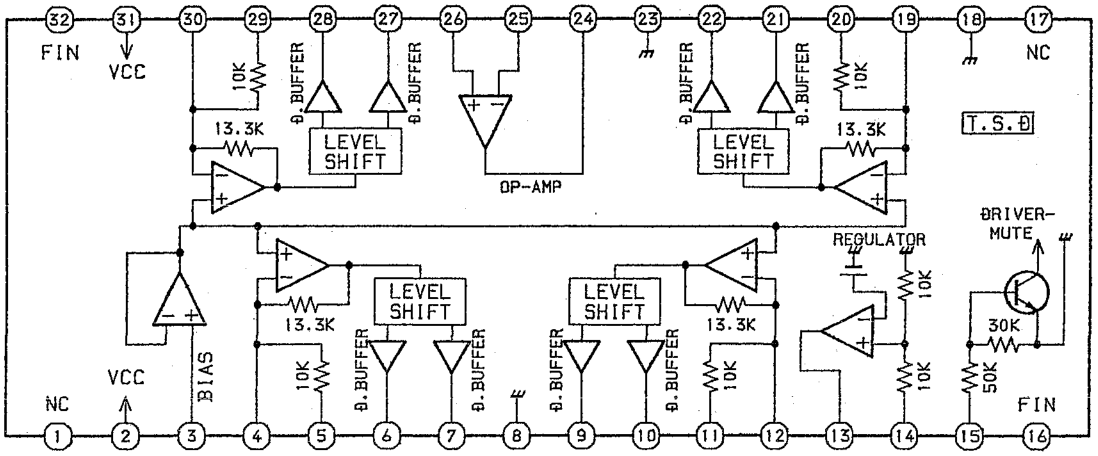
VCC VREF
2
8
6 VS
7 OUT1
3 OUT2
REG.
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
9
1
5
IN1 IN2
GND

TRUTH TABLE

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ :HIGH IMPEDACE
INPUT IS "H" ACITVE

IC, BA6897S



32
31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
FIN
VCC
NC
10K
D.BUFFER
D.BUFFER
LEVEL SHIFT
13.3K
OP-AMP
D.BUFFER
D.BUFFER
LEVEL SHIFT
10K
13.3K
T.S.D
DRIVER-MUTE
REGULATOR
LEVEL SHIFT
13.3K
LEVEL SHIFT
13.3K
10K
10K
30K
50K
10K
D.BUFFER
D.BUFFER
D.BUFFER
D.BUFFER
10K
BIAS
VCC
NC
FIN
1
2
3
4
5
6
7
8
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10
11
12
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14
15
16

T.S.D:Thermal shift down circuit
D.BUFFER:Drive Buffer

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the CD EDIT/CHECK/button. All FL display tubes will light up, and the test mode will be activated.

2. How to cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the power switch button.
   - Disconnect the AC plug.

3. CD Test Mode Functions
   When test mode is activated, the following mode functions can be used by pressing the operation keys.

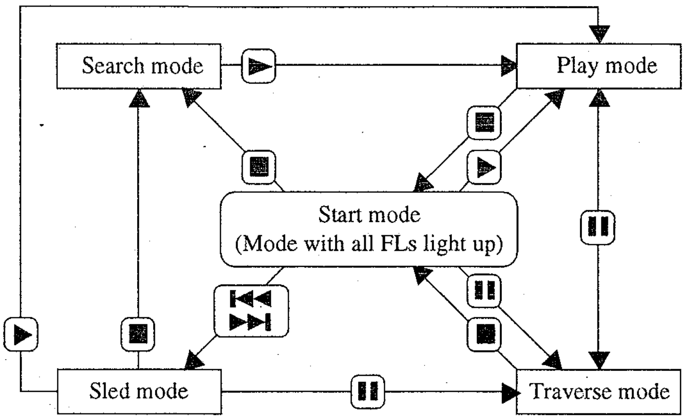
Mode	Operation	FL display	Operation	Contents
Start mode	Test mode activation	All FL light up	• Laser diode illuminated under normal circumstances (CD block power supply ON)	Displays the machine mode that it is a test mode. All FL displays light up
Search mode	■ key	— ——	• Continual focus search * NOTE 1 (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes.	FOCUS SERVO • Laser current measurement (Across R628 resistor) • Check focus search waveform • Check focus error waveform * FOK / FZC are not monitored in the search mode.
Play mode	▶ key	/ —	• Normal playback • Focus search is continued if TOC cannot be read * NOTE 1	FOCUS SERVO / TRACKING SERVO CLV SERVO / SLED SERVO Check FOK / FZC
Traverse mode	❚❚key	/ —	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON / OFF Tracking balance (traverse) adjustment TP6(SFR602)
Sled mode	⏮ key ⏭	All FL light up	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases, the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to start mode (No. 1).

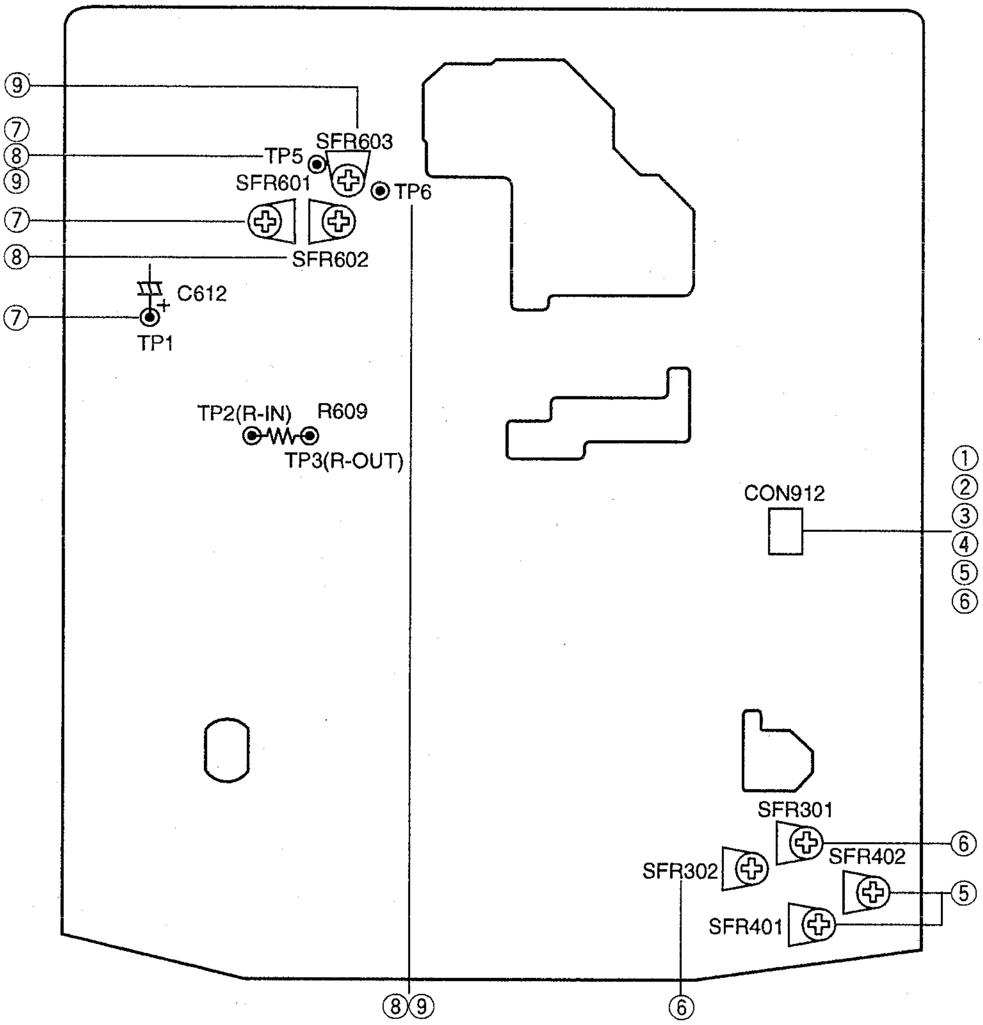
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



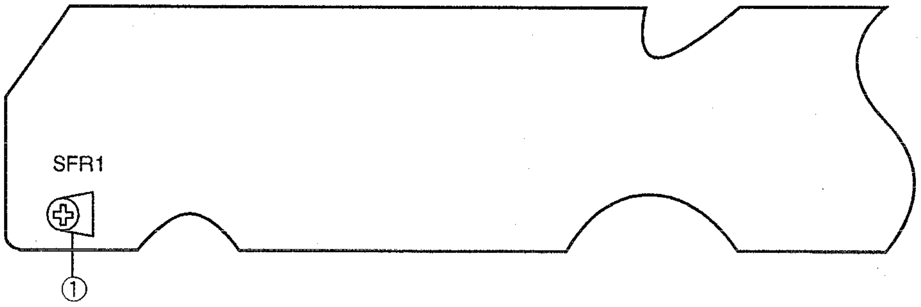
ELECTRICAL ADJUSTMENT

A MAIN C.B



⑨
⑦
⑧
⑨
⑦
⑧
⑦
TP5
SFR603
SFR601
TP6
SFR602
C612
TP1
TP2(R-IN)
R609
TP3(R-OUT)
CON912
①
②
③
④
⑤
⑥
SFR301
⑥
SFR402
SFR302
⑤
SFR401
⑧⑨
⑥

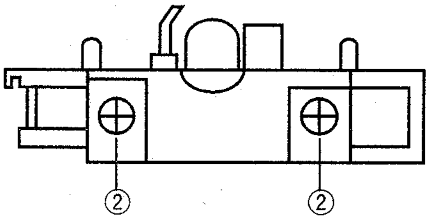
G DECK C.B



< DECK SECTION >

1. Tape Speed Check
   Settings : • Test tape : TTA–100
   • Test point : TP CONN 3P (CON 912)
   • Adjustment location : SFR1
   Method : Play back the test tape and check for 3000Hz ± 5Hz.
   (NOTE) : RVS SIDE SPEED SPECIFICATION
   FWD SIDE SPECIFICATION ±45Hz

DECK R/P E HEAD



2. Head Azimuth Adjustment (DECK 1,2)
   Settings : • Test tape : TTA–300
   • Test point : TP CONN 3P (CON 912)
   • Adjustment location : Head azimuth adjustment screw
   Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD PLAY and REV PLAY mode.

3.PB Sensitivity Check (DECK 1,2)
   Settings : • Test tape : TTA-200
   • Test point : TP CONN 3P (CON 912)
   Method : Playback the test tape and check for outputlevel becomes 300mV ± 5mV.

4. PB Frequency Response Check
   Settings : • Test tape : TTA–300
   • Test point : TP CONN 3P (CON 912)
   Method : Play back the 315Hz and 10kHz signals of the test tape and check output difference to within 0dB ± 2dB,and the 10kHz signal with respect to that of the 315Hz signal is 2dB.

5. REC / PB Frequency Responce Adjustment
   Settings : • Test tape : TTA-602
   • Test point : TP CONN 3P (CON 912)
   • Input signal :1kHz/10kHz (VIDEO2/AUX IN)
   • Adjustnent location : SFR401(Lch)
   SFR402(Rch)
   Method : Establish the record mode. Adjust the CON 912 signal to 210mV and attenuate to -20dB. Record and playback 1kHz and 10kHz. Adjust SFR so that level difference between 1kHz and 10kHz is 0dB ± 0.3dB.

6. REC/PB Sensitivity Adjustment (DECK 2)
   Settings : • Test tape : TTA-602
   • Test point : TP CONN 3P (CON 912)
   • Input signal : 1kHz/10kHz (VIDEO2/AUX IN)
   •Adjustment location : SFR301 (Lch)
   SFR302 (Rch)
   Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP CONN 3P(CON 912) becomes 21mV. Record and playback the 1kHz signal and adjust SFRs so that the output is 21mV ± 0.5dB.

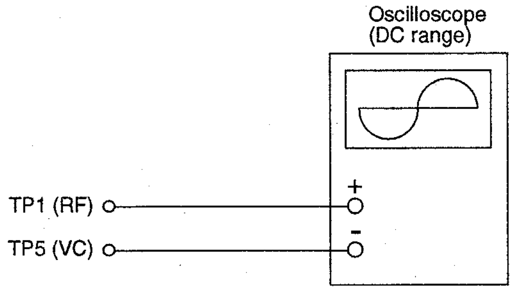
PRACTICAL SERVICE FIGURE

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.35% (R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 180g-cm
Back tension :	2 ~ 7g-cm (FWD, REV)
Distortion :	Less than 2.0% (PB, AC) Less than 3.0% (REC/PB, AC)
Noise level :	Less than 50mV (PB, AC) Less than 50mV (REC/PB, AC)
Signal to noise ratio :	More than 40dB (PB, AC) More then 38dB (REC/PB, AC)
Erasing ratio :	More than 60dB (at 125Hz)
Test tape :	TTA–602

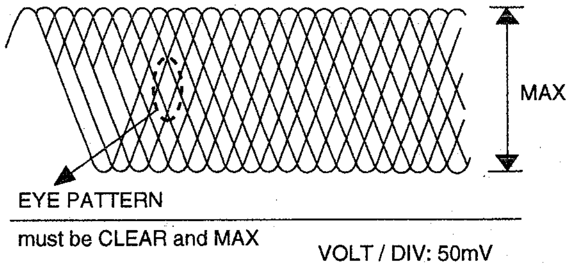
<CD SECTION>
Note :
Connect a probe (10:1) of the osilloscope or the frequency counter to a test point.

7. Focus Bias Adjustment
   Make the focus bias adjustment when replacing and repairing the optical block.



1) Connect an oscilloscope to the test points TP1 (RF) and TP5 (VC).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR601 so that RF signal of the test point TP1 (RF) is MAX and CLEARREST.

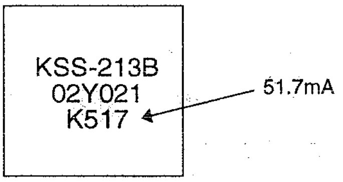
RF signal waveform



VOLT / DIV: 50mV
TIME / DIV: 0.5μs

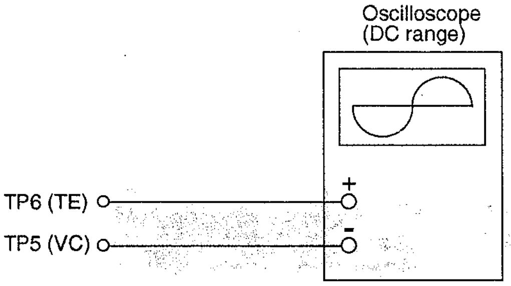
Note:

The current of the laser signal can be checked with the voltages on both sides of R628 (10Ω). The difference for the specified value shown on the level must be within ± 6.0mA.

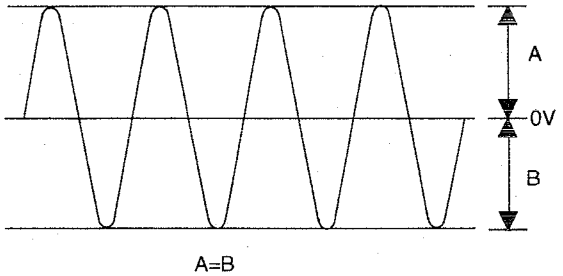


$$\text{Laser current Iop} = \frac{\text{Voltage across R628}}{10}$$

8. Tracking Balance Adjustment



1) Connect an oscilloscope to the test points TP6 (TE) and TP5 (VC).
2) Start the CD test mode.
3) Insert test disc TCD-782 (YEDS-18) and become traverse mode of CD test mode.
4) Adjust SFR602 so that the traverse waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
5) After the adjustment is completed, remove the connected lead wires from the terminals.
6) Cansel the CD test mode.



A=B

VOLT / DIV: 20mV
TIME / DIV: 1mS

9. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment. Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these gains are reciprocate, the adjustment is performed at the point where both gains are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is not satisfied, the symptoms below appear.

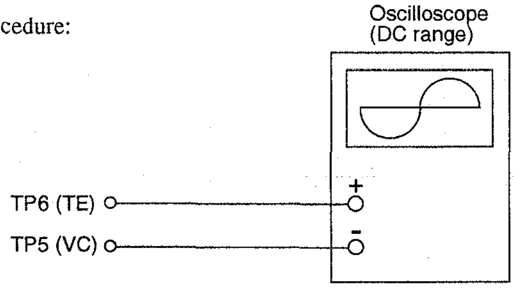
Gain Symptoms	(Focus)	Tracking
• The time until music starts becomes longer for STOP → -PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP → -PLAY or automatic selection (⏮, ⏭ buttons pressed.)	–	low
• Disc stops to rotate shortly after STOP → -PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops.	–	low
• More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

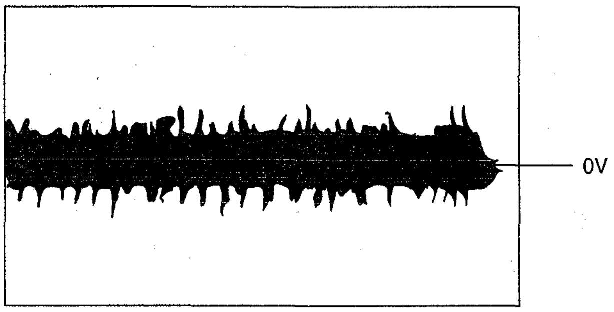
– Simple adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment.
If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



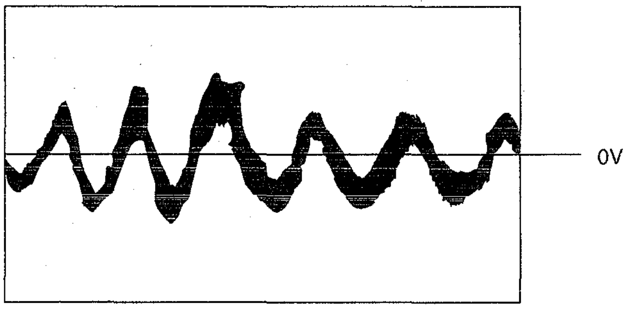
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP6 (TE) of the MAIN C.B.
4) Adjust SFR603 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT / DIV: 50mV
TIME / DIV: 1mS

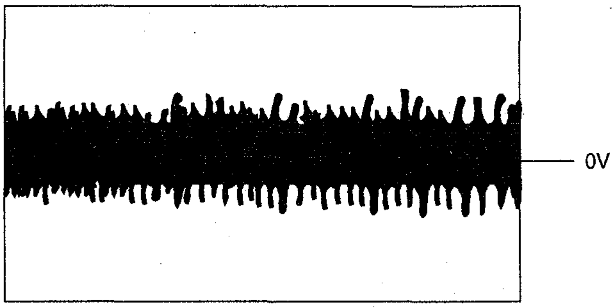
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted)



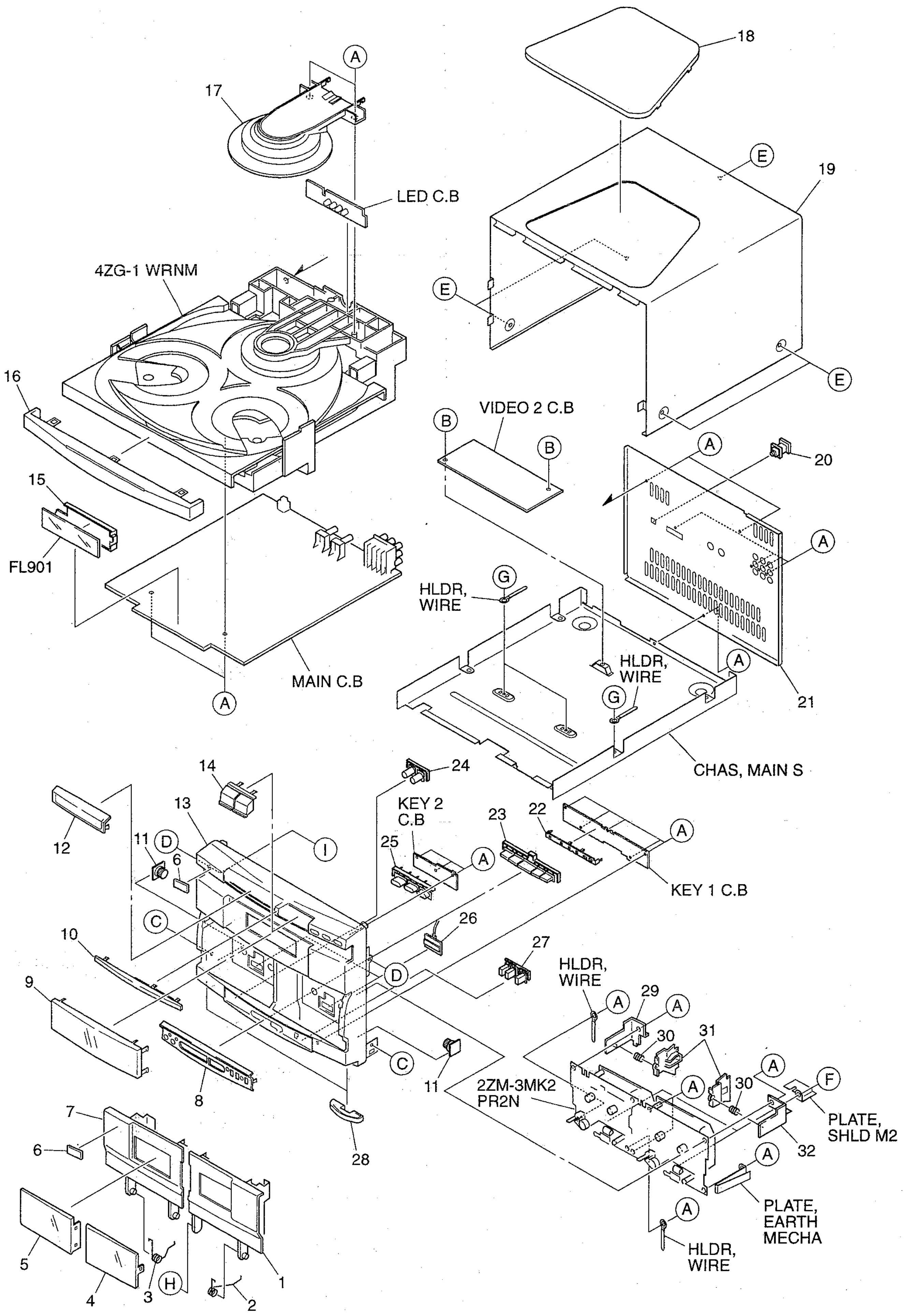
VOLT / DIV: 50mV
TIME / DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than in low gain)



VOLT / DIV: 50mV
TIME / DIV: 1mS

MECHANICAL EXPLODED VIEW 1 ／ 1


18
17
A
LED C.B
E
19
4ZG-1 WRNM
E
E
16
VIDEO 2 C.B
B
B
A
20
15
A
FL901
HLDR,
WIRE
G
HLDR,
WIRE
A
G
21
MAIN C.B
A
CHAS, MAIN S
14
24
12
13
KEY 2
C.B
23
22
A
11
D
6
I
25
A
KEY 1 C.B
C
26
10
27
HLDR,
WIRE
9
D
A
29
A
30
31
C
11
A
30
A
F
2ZM-3MK2
PR2N
PLATE,
SHLD M2
8
7
6
28
A
32
A
PLATE,
EARTH
MECHA
HLDR,
WIRE
5
4
3
H
2
1

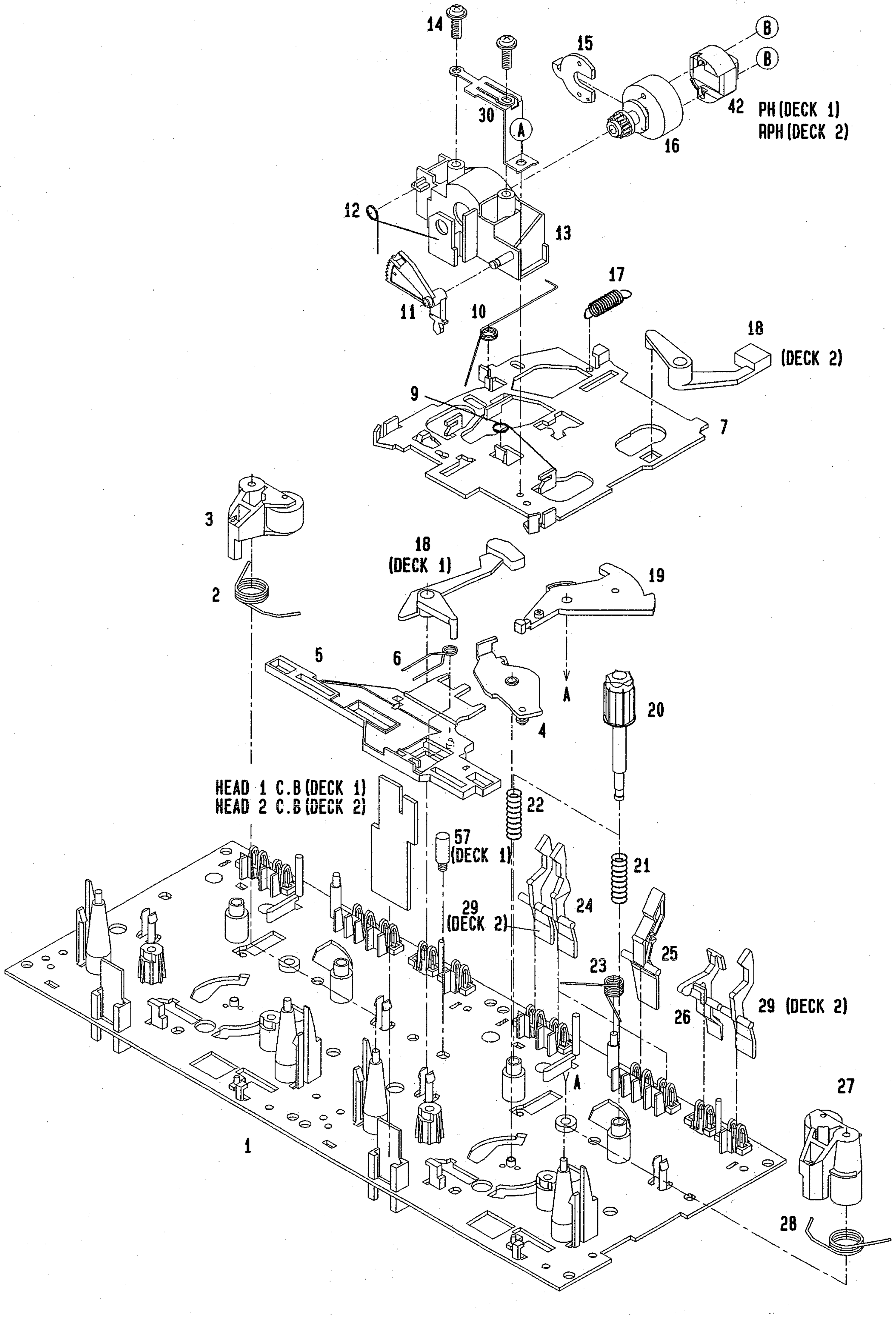
MECHANICAL PARTS LIST 1 ／ 1

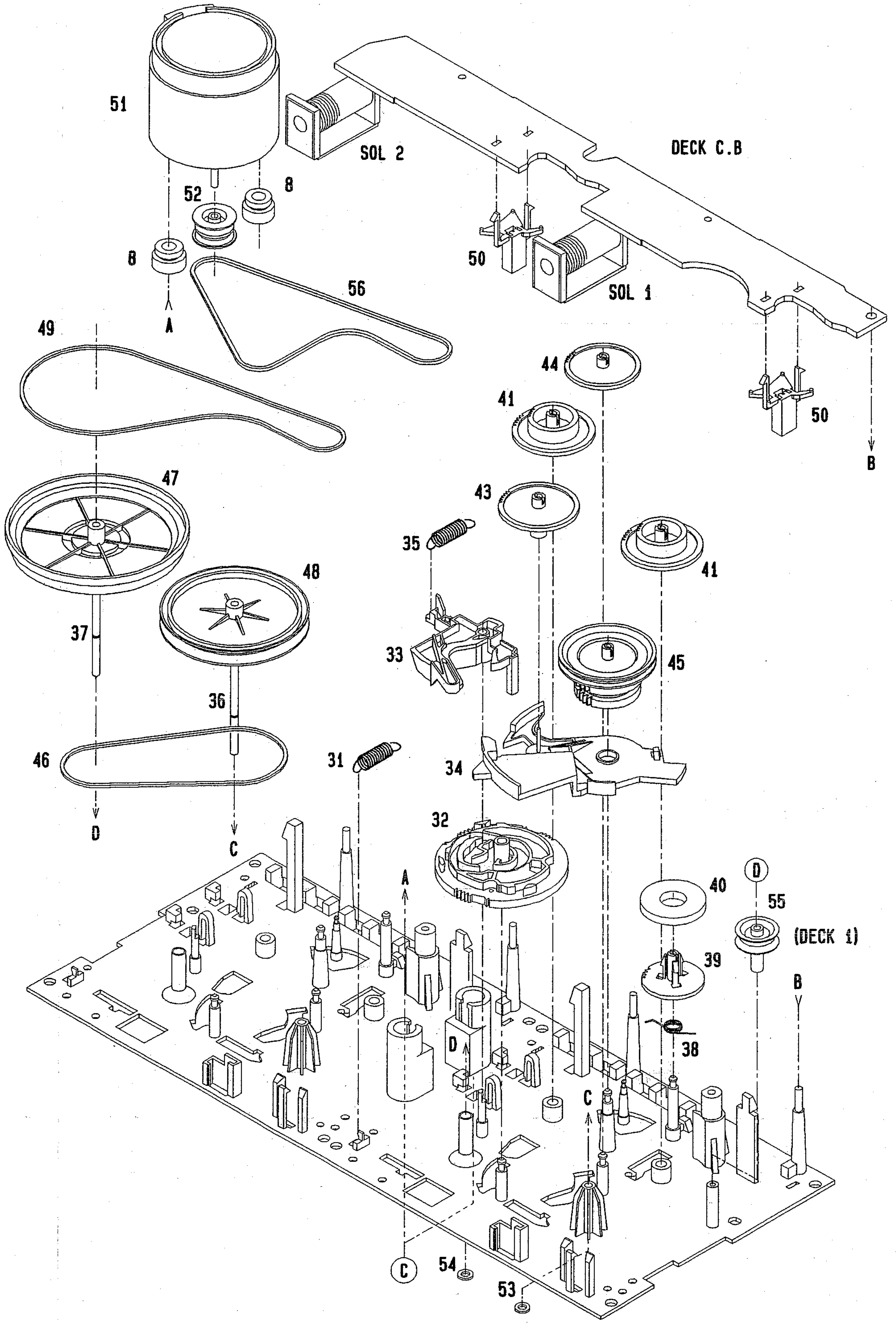
DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	86-NV1-004-019		BOX,CASS 2
2	83-NV4-202-119		SPR-T,EJECT 2
3	83-NV4-201-119		SPR-T,EJECT 1
4	86-NV1-009-019		WINDOW,CASS 2
5	86-NV1-008-019		WINDOW,CASS 1
6	82-NE8-032-019		BADGE AIWA 27.5
7	86-NV1-003-019		BOX,CASS 1
8	86-NV1-015-019		PANEL,CONTROL
9	86-NV1-006-019		WINDOW,DISPLAY
10	86-NV1-016-019		PANEL,CD
11	87-063-165-019		OIL-DMPR 150
12	86-NV1-007-019		WINDOW,CD
13	86-NV1-001-019		CABI,FR<YJ,YL>
13	86-NV1-020-019		CABI,FR U<YU>
14	86-NV1-011-019		KEY,OPEN
15	86-NT1-203-019		GUIDE,FL
16	86-NV1-005-019		PANEL,TRAY
17	84-ZG1-011-019		REFLECTOR,CD
18	86-NF6-007-019		WINDOW,TOP
19	86-NV1-017-019		CABI,STEEL
20	84-ZG1-245-019		CAP,OPTICAL
21	86-NV1-002-019		PANEL,REAR YJBNM<YJ>
21	86-NV1-021-019		PANEL,REAR YLBNM<YL>
21	86-NV1-019-019		PANEL,REAR YUBNM<YU>
22	86-NV1-202-019		GUIDE,LED

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
23	86-NV1-010-019		KEY,PLAY
24	86-NV1-013-019		KEY,REC
25	86-NV1-012-019		KEY,DISC
26	87-070-108-019		LED,SLF-301C-37
27	86-NV1-014-019		KEY,DOLBY
28	85-NC1-019-010		RING,FOOT
29	82-NF5-226-019		HLDR,LOCK 1N
30	82-NF5-228-019		SPR-C,LOCK
31	82-NF5-229-019		PLATE,LOCK
32	82-NF5-227-019		HLDR,LOCK 2N
A	87-067-703-019		BVT2+3-10 (W/0 SLOT)
B	87-067-584-019		BVT2+3-6 W/O SLOT
C	87-591-094-419		QIT + 3 - 6 GOLD
D	87-721-097-419		QT2+3-12 GLD
E	87-067-641-019		UTT2+3-8 W/O SLOT BLK
F	87-571-032-419		VIT+2-3
G	87-571-092-419		VIT+3-4
H	82-NE8-215-019		W,4.2-6.8-0.18
I	85-NF7-599-019		PVC W,3.2-8-0.3

TAPE MECHANISM EXPLODED VIEW 1 / 1


14
15
B
B
30
A
42
PH (DECK 1)
RPH (DECK 2)
16
12
13
11
10
17
18
(DECK 2)
9
7
3
18
(DECK 1)
19
2
5
6
A
4
20
HEAD 1 C.B (DECK 1)
HEAD 2 C.B (DECK 2)
22
57
(DECK 1)
21
29
(DECK 2)
24
25
23
26
29 (DECK 2)
A
27
1
28

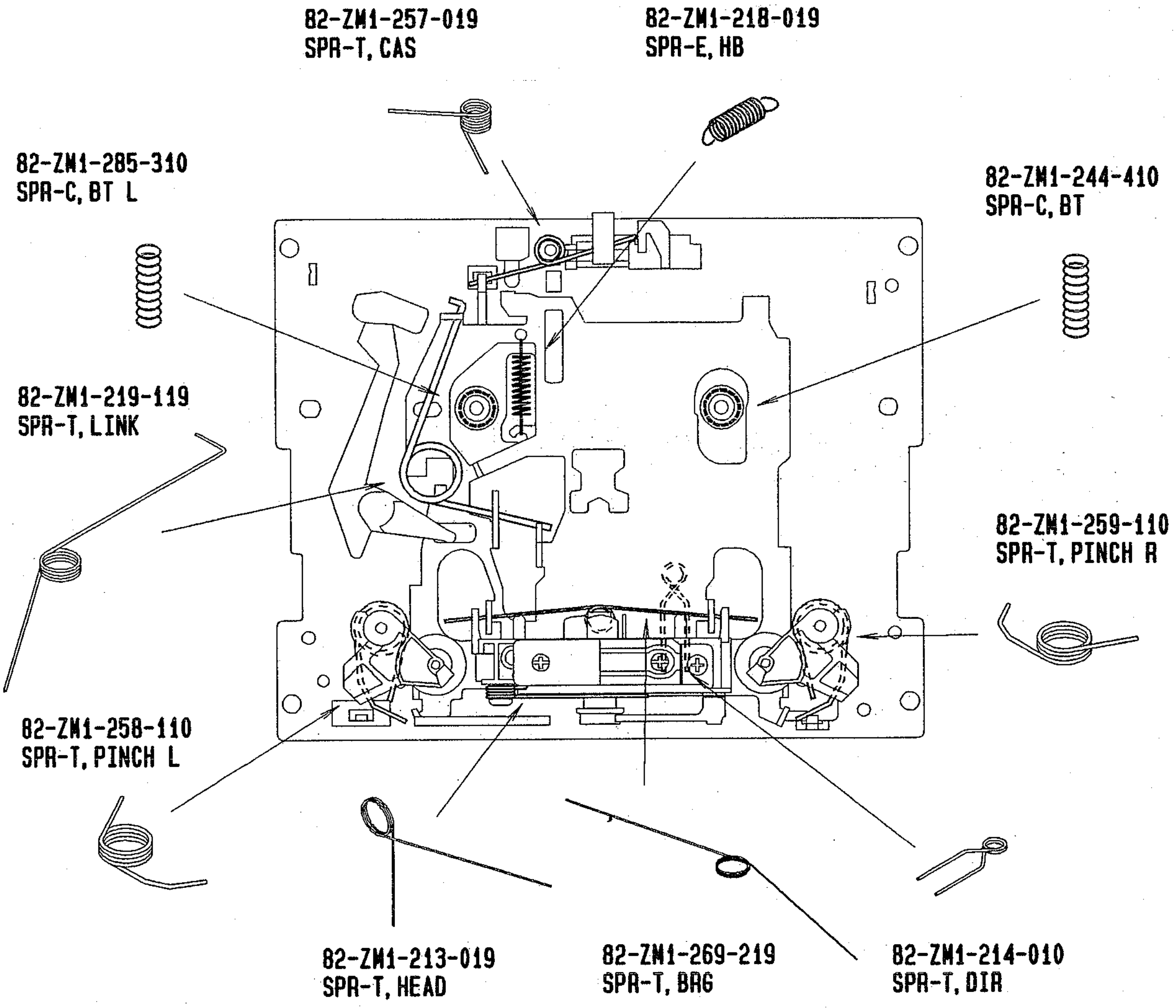

51
SOL 2
DECK C.B
52
8
8
50
SOL 1
56
A
49
44
41
50
B
47
43
35
41
48
37
33
45
36
46
31
34
D
C
32
A
D
40
55
(DECK 1)
39
B
D
38
C
C
54
53

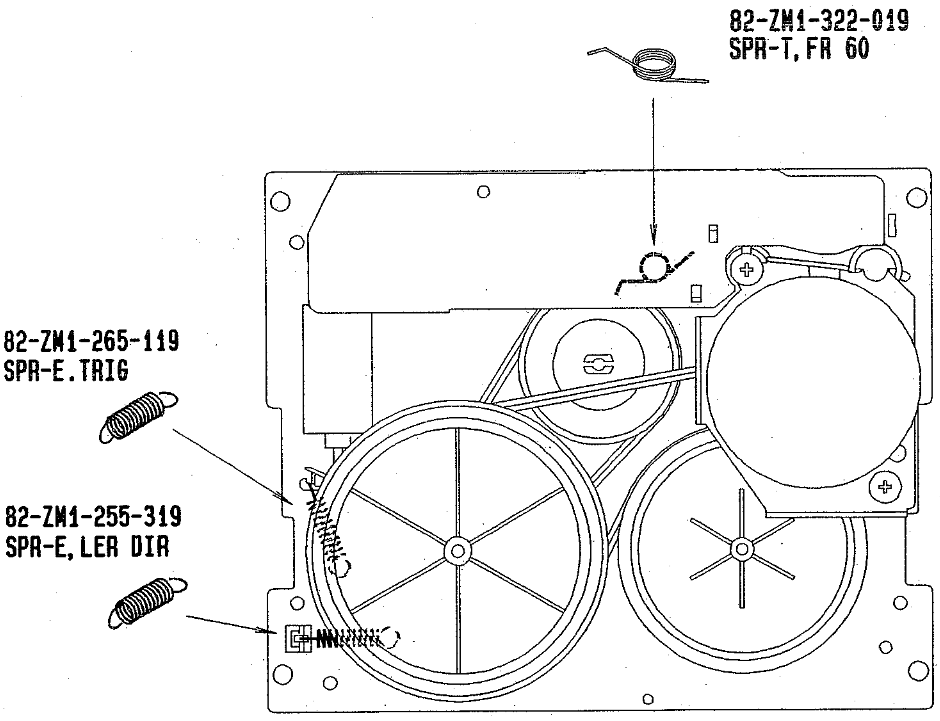
TAPE MECHANISM PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	82-ZM3-301-519		CHAS ASSY,M2
2	82-ZM1-258-110		SPR-T,PINCH L
3	82-ZM1-345-019		LVR ASSY,PINCH L W
4	82-ZM1-333-010		PLATE,LINK 2
5	82-ZM1-266-11K		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-81K		CHAS,HEAD
8	82-ZM3-307-019		CUSH-G,DIA3.7-8-3.2
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-119		SPR-T,LINK
11	82-ZM1-210-119		GEAR,H T
12	82-ZM1-213-019		SPR-T,HEAD
13	82-ZM1-207-619		GUIDE,TAPE
14	82-ZM1-283-310		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-119		HLDR,HEAD
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-21K		LVR,PLAY
20	82-ZM1-217-319		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-310		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM1-241-319		LVR,MC
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-346-019		LVR ASSY,PINCH R W
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-11K		LVR,REC (DECK 2)
30	82-ZM1-298-010		SPR-P,EARTH
31	82-ZM1-255-319		SPR-E,LVR DIR
32	82-ZM3-305-01K		GEAR,CAM M2
33	82-ZM1-227-21K		LVR,TRIG
34	82-ZM3-306-11K		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-31K		GEAR,REEL
42	87-046-355-019		HEAD,PH HADKH2529B(PH)
42	87-046-356-019		HEAD,RPH HADKH5581B(RPH)
43	82-ZM1-225-21K		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM1-228-810		SLIP DISK ASSY
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-238-81K		FLY-WHL ASSY,R (DECK 2)
47	82-ZM3-210-71K		FLY-WHL ASSY,R2 (DECK 1)
48	82-ZM1-235-51K		FLY-WHL ASSY,L (DECK 2)
48	82-ZM3-208-61K		FLY-WHL ASSY,L2 (DECK 1)
49	82-ZM3-329-210		BELT,SBU R2
50	82-ZM1-245-210		HLDR,IC
51	87-045-347-019		MOT,SHU2L 70(M1)
52	82-ZM3-221-010		PULLEY,MOT 2M
53	82-ZM1-288-019		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
55	82-ZM3-304-110		PULLEY,COUPLER (DECK 1)
56	82-ZM3-328-110		BELT,SBU P2
57	82-ZM3-216-019		SHAFT,COUPLER N(DECK 1)
A	82-ZM1-315-010		S-SCREW,GVIDE TAPE
B	80-ZM6-207-019		V+1.6-7
C	82-ZM3-318-019		S-SCRW MOTOR M2
D	87-067-972-019		PW,1.05-3-0.25 SLT

SPRING APPLICATION POSITION

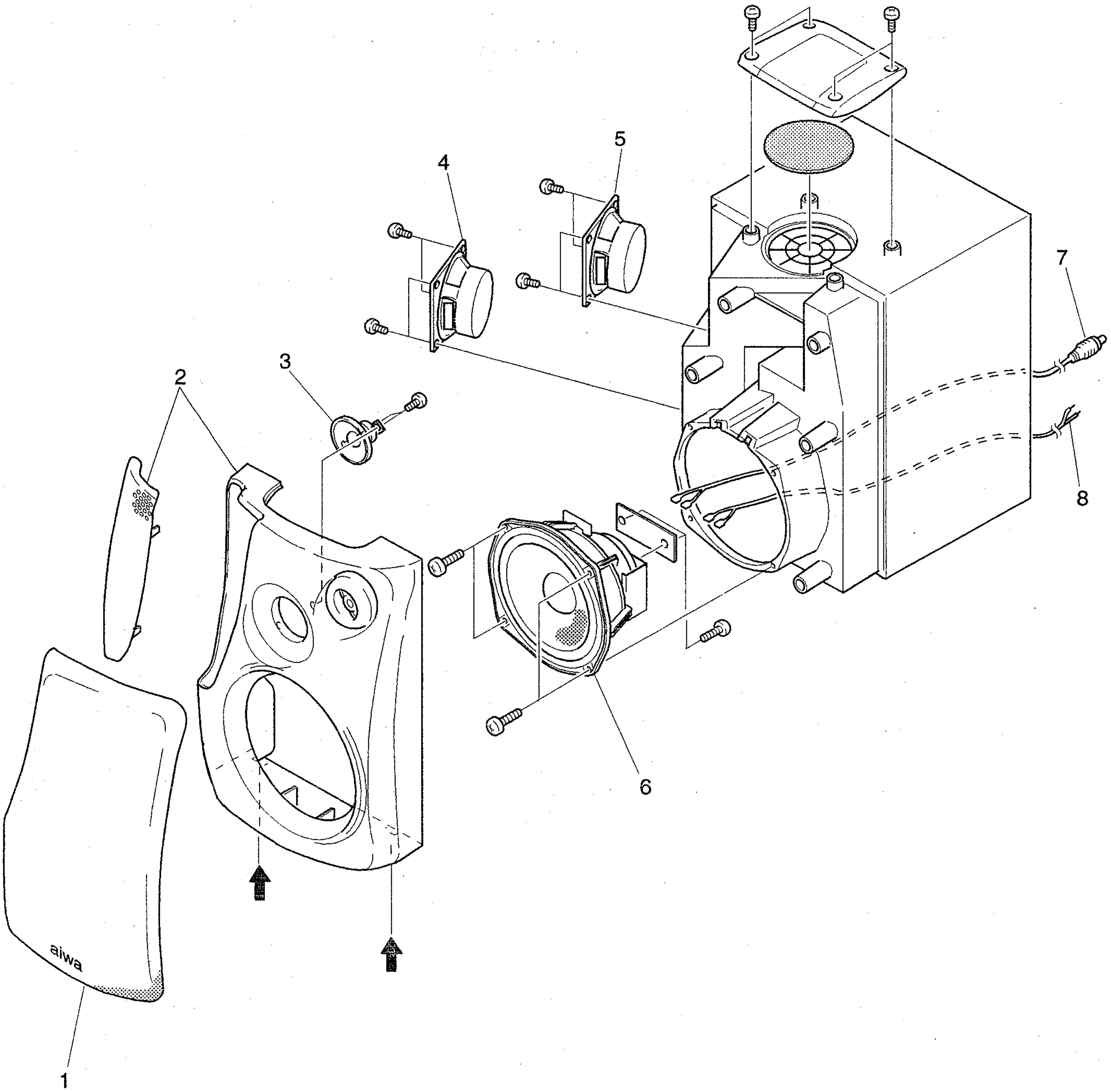

82-ZM1-257-019
SPR-T, CAS
82-ZM1-218-019
SPR-E, HB
82-ZM1-285-310
SPR-C, BT L
82-ZM1-244-410
SPR-C, BT
82-ZM1-219-119
SPR-T, LINK
82-ZM1-259-110
SPR-T, PINCH R
82-ZM1-258-110
SPR-T, PINCH L
82-ZM1-213-019
SPR-T, HEAD
82-ZM1-269-219
SPR-T, BRG
82-ZM1-214-010
SPR-T, DIR


82-ZM1-322-019
SPR-T, FR 60
82-ZM1-265-119
SPR-E.TRIG
82-ZM1-255-319
SPR-E, LER DIR

MODEL NO.

SX-ANH9/ANH90

SPEAKER EXPLODED VIEW 1／1



SPEAKER PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	86-NS1-010-010		GRILLE FRAME ASSY,R
1	86-NS1-011-010		GRILLE FRAME ASSY,L
2	86-NS1-001-010		PANEL FR,R
2	86-NS1-002-010		PANEL FR,L
3	86-NS1-608-010		SPKR T 50
4	86-NS1-606-010		SPKR S 80
5	86-NS1-604-010		SPKR M 80
6	86-NS1-602-010		SPKR W 140H
7	85-NS6-611-019		SPEAKER CORD Y/B
8	83-NS5-613-019		SPEAKER CORD ASSY

■ ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	86-NT1-901-019		IB,HE(ECA)-M<HEJ,HRJ>
1	86-NT1-902-019		IB,LH(ES)-M<LH>
1	86-NT1-903-019		IB,U(EFS)-M<U>
2	85-NF5-631-019		RC-T501
3	87-006-225-019		AM LOOP ANT NC2
4	87-043-115-019		ANT,FEEDER FM
⚠5	87-099-789-019		PLUG,ADPTR IR44<EXCEPT U>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART